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And American Gardener's Assistant.

VOL. 6. NO. 62.

ERIE, PA., AUGUST, 1892.

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Official Organ of the Erie Chrysanthemum and Northwestern Pennsylvania Horticultural Association and Kindred Societies.

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And American Gardener's Assistant.

VOL. 6. NO. 62.

ERIE, PA., AUGUST, 1892.

SUBSCRIPTION PRICE ONE YEAR, 25 CENTS.
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The Cultivation and Improvement of the Strawberry.

By A PRACTICAL GARDENER.

For the FARM AND VINEYARD.

The chief aim of the strawberry grower—whether he be growing for his own table or the market—should be directed toward the production of berries of superior quality. These, if put on the market in the best possible shape, will be sure to command fancy prices, while in these days of sharp competition poor, inferior fruit is hardly worth growing.

In planting strawberries, as in all other crops, the first requisite is a well drained soil, heavily manured and cultivated to as great a depth as possible. Although the strawberry will grow and produce a crop of fruit in any deep, porous soil, if I could have my choice of location, I would prefer a sandy loam, somewhat retentive, but nowise approaching clay. In such a soil, ploughed or spaded to a depth of not less than 12 inches (deeper would be better), the strawberry will send its long, slender roots down to a great depth—deeper than many would deem possible—and thus be the better able to withstand a drought, and will sometimes produce a crop of fruit of the finest quality when those planted on a shallow soil are completely dried up.

In the field we plant in rows three feet apart, and the plants in the rows 18 inches apart. We cultivate between the rows, a horse and cultivator going over the entire patch about once a week as long as the weeds and runners continue to grow. The weeds that spring up in the rows are pulled out by hand. Although we allow no runners to strike root and grow between the rows, we give them *carte blanche* to make what growth they will in the rows, and on these rooted runners some of our finest fruit is grown the following season.

This is called the matted row system, and, to the best of my belief, is the only practical system for the market gardener.

In small gardens, where manual labor takes the place of the horse and cultivator, I would plant differently. I would prepare beds five feet in width, with a walk between each bed two feet wide. I would set the plants one foot

apart each way. The work of hoeing and weeding could then be done from the alleyways, without so much as setting a foot on the beds, which, to say the least, is a very great advantage in wet weather. I would keep the runners cut off close up to the plant, thus

required to keep the plants clear of weeds and runners.

The best time to set out the plants is in early spring. These will be at their best, and produce a crop of fruit the following season. But where land is scarce and valuable potted plants can

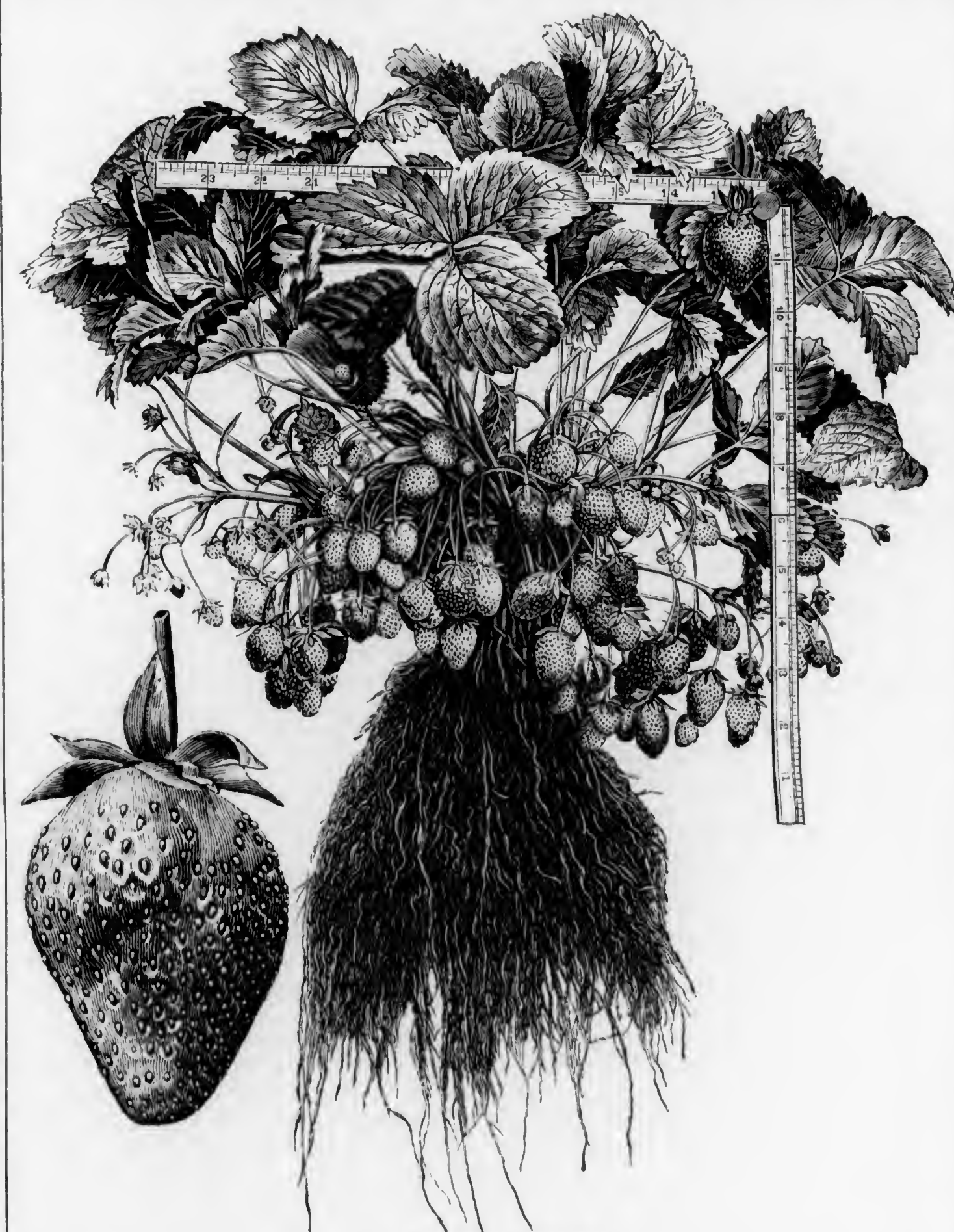
the ground becomes frozen solid, which generally takes place in this part of the country some time in December. The plants and ground should then be covered lightly with some kind of light, loose material, chopped straw, corn stalks, rough litter from the stables, anything that will serve to keep the plants, not from freezing, but from alternate freezing and thawing.

About the end of March go over the beds and rake the mulch from the top of the plants into the alleyways and between the plants. This mulch will now answer a double purpose—warding off the burning rays of the sun, thus keeping the roots moist and cool in dry weather, and keeping the fruit clean in wet weather.

There is quite a diversity of opinion as to the number of years a strawberry patch should last in bearing without being renewed, some claiming they can produce profitable crops three, four, or even six years. I never found it profitable to fruit a patch more than two years at the most, and during the past few years I have taken but a single crop, plowing the ground as soon as the fruit is picked, planting late corn, cabbages or celery—thus getting two crops in one year—planting a new patch in April, and plowing up the old patch in July.

Not only do we get better berries, but I have proved to my entire satisfaction that it costs less to plant a new bed every year than to care for the old one, especially if stable manure is used for a top dressing, as stable or barnyard manure always contains more or less weed seeds. If a heavy dressing of manure is plowed or turned under with the spade at the time of planting, concentrated commercial fertilizers, containing a large percentage of actual potash, can be used with advantage, with no fear of befouling the ground, as commercial fertilizers contain no seeds. Nitrate of soda and kanit, or, as it is sometimes called, German potash salts, used early in spring as a top dressing, at the rate of 500 pounds of kanit and 200 pounds of nitrate of soda per acre, will greatly increase the yield, as well as enhance the value of the fruit, making a firmer and better berry than barnyard manure.

I have several times been asked to



PARKER EARLE.

throwing the entire strength into the single plant. This is called the hill system, and produces the finest fruit, and is decidedly the best system for the amateur.

Its only drawback to the market gardener is the great amount of work

be obtained and set out as late as August, after a crop of early vegetables have been taken off the ground, with a certainty of a crop of fruit the following season. The after cultivation is the same in both cases.

No further attention is required till

name the best variety of strawberry for the market gardener, and the best variety for the amateur, and, disappointing as it may seem, I can only make one answer, and that is, there is no best variety, for a variety that will do splendidly in one locality often turns out to be an utter failure when transferred to another location. Each variety seems to have special requirements of its own, and my advice is this: Go around among neighboring growers; learn what variety or varieties are giving the best results. Where soil, climate and treatment the nearest approach your own, plant the bulk of your land with these standard varieties, and each year purchase a dozen or two of three or four different kinds to experiment with. But let me caution you against buying, except in very small quantities, any of the high priced novelties offered every season. It is always more profitable to let some one else try them first. Never mind if the tree agent does tell you they are a kind that require no sugar or cream to make them palatable, or he may lead you to think they will grow so large you will require a wheelbarrow to haul a single berry from the patch. Always remember that tree agents, as well as other men, are not infallible.

With many there is no more profitable berry than the old standby, *Wilson's Albany*, and no berry will give such good satisfaction over such a large area. We have seen it producing good crops on almost every variety of soil, from a light gravel to a heavy clay.

Another strawberry that crops well over a large section of the country is *Bubach's No. 5*. It combines many excellent qualities, such as uniform size, fine form and color, good quality of fruit, but with me is a very uncertain bearer.

Clond originated in Louisiana, and is taking first place in the South for a market berry to ship North; but here in the North it is not profitable, as it lacks both quality and quantity.

Crescent Seedling takes first place with some as an early berry, but with me no better than the *Wilson*.

Charles Downing is a very large berry, deep scarlet in color, of fine flavor and very productive. A splendid berry for small gardens, but too soft for shipping purposes.

Cumberland Triumph is a fine, large berry. It can be strongly recommended for small gardens, but, like the *Downing*, too soft for shipping.

The *Haverland* this year behaved the best, ripening an immense crop of fair sized berries as early as the *Wilson*, and continuing to bear ten days after the *Wilson* were all picked. It is very profitable. Its only drawback is the fruit lays on the ground, which is a very great objection on sandy soils, unless the land is heavily mulched.

Gandy is a good late berry, and can be depended on in most seasons, ripening about the same time as *Golden Delancey*, which is another good late berry.

But, taking it all in all, no berry has paid me so well during the last eight years as the *Manchester*, a large, firm berry, of good quality and a splendid cropper, considered by many of our customers to be the best preserving berry grown, as it possesses the sharp,

brisk flavor so much sought after in a preserving berry.

Sharpless with me is a light cropper. The berries are very large, but, according to my idea, they are not of good quality, being too insipid. If they were a little sharper in flavor, they would be better.

Parker Earle (illustrated on our front page) can be recommended for most soils, ripening a larger crop of marketable berries than any other new variety tested here. It originated in Texas in 1886. Being protected from late frosts by its abundant foliage, it has produced a large crop of fruit when other kinds were destroyed. I think it will prove to be a good berry for either the market gardener or the amateur, but as the plant makes such large crowns, is best grown in hills.

Economical Cows.

The cow for economy is the one that from a quantity of feed will produce the most and best milk or butter. This cow will not be any larger than is necessary to do her work and she will not store up a lot of fat that will be of no practical use to her owner. She will eat much more feed than a wasteful cow, but here one point showing her true economy comes in; while she eats more feed she gives a larger per cent. in return than the wasteful cow, and if we take a herd of economical cows and compare it with a larger herd of wasteful ones we will only have to furnish the food of support for the smaller herd while we get as much milk or butter as the larger herd gives. The difference between keeping a herd of economical cows and a wasteful herd may be the difference of a wide margin in the profits.

The best is the cheapest, whether it be cows, feed or care, and the economical cow is the best cow, no matter what her breed may be, or whether she is of any breed; for dairy work alone we must look to the individuality of each cow.—*National Stockman*.

Japanese Fads About Flowers.

The Japanese consider it especially difficult to arrange chrysanthemums, and seven faults are noted which must carefully be guarded against in disposing of large blossoms of this plant. A blossom must not present its back in a composition, nor yet turn its full face to view; the different flowers must not have stems of the same length; three must not be arranged in a triangular form, nor may any number be placed in a regular steplike way; the flowers should not be hidden by leaves; nor should a large open blossom be put near the base of the composition, and, finally, the artist must not fall into the sin of color-sandwiching, nor placing a blossom of one color between two others of another tint.—*Garden and Forest*.

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Okra (or Gombo).

Few people in the Northern States are aware of the delicious flavor imparted to a dish of soup by a few pods of okra. If the seed is not sown till the ground becomes warm—say about the middle or end of May—there need be but little trouble to grow a crop of okra, providing your ground is moderately rich. It is quite useless to attempt to grow it on poor ground. The part used is the young pods. These should be picked when about half grown, and if not wanted for present use, they can be dried and kept for use during winter. There are several varieties, *Tall Green*, *Dwarf Green*, *Little Gem*, etc., but no variety does so well with us as *White Croole*, or, as it is sometimes called, *White Velvet*, owing to its soft, velvety touch. This variety commences to bear quite early, and continues to bear till the plants are destroyed by frost. Our illustration shows the plant in full bearing.

Road-Making.

The question of roads is one of the most important with which the farmer has to deal. The coming World's Fair will present an excellent opportunity for education on this subject. A suitable building should be erected in which can be grouped everything which is needed to educate the people in the matter of road-making. It is suggested that each State send cross sections of roads showing the construction best adapted to the various localities, considering also the most available material to use in building. A complete and comprehensive exhibit of this character might do much towards bringing about National and State legislation for the construction and maintenance of good roads—something sorely needed all over the country.—*Field and Farm*.

Mulching Cucumbers.

A New York farmer says: "I have tried for a number of years giving cucumber vines a heavy mulch of coarse manure, and never failed to have good cucumbers and plenty of them. I use boxes about the hills and after the first or second hoeing put on the mulch and leave the boxes until the vines are even with the top. If possible the mulch is applied after a heavy rain. In this way I am practically independent of droughts, and the vines retain their bearing quality most of the summer. Also little or no hoeing is needed, and the land is in excellent condition for next year's crop."

Training Grape Vines.

By N. J. SHEPHERD.

For the FARM AND VINEYARD.

A wire is better than strips or poles. The little tendrils seem to be able to grasp and hold to the wires better than to wooden poles or strips. Another item is of importance, and that is to have the wires stretched reasonably high. This admits more air and a better circulation underneath, and in this way lessens the danger of rot or mildew, while at the same time it affords a better opportunity of working and cultivating around the vines. Generally, two good wires will be sufficient, and the top wire can be five feet from the ground. Good, stout stakes will answer at each vine, if good, stout posts are set occasionally, and they are well braced, and then care is taken to stretch and fasten the wires tight.

Care must be taken each year to prune severely. The greater part of the pruning should be done in winter, when the weather is mild, and before the sap starts in the spring.

Some pinching back can always be done during the summer when needed. While the soil should be rich, it is easily possible to have it too rich, and the plants make too heavy a growth of wood at the expense of fruit. Potash fertilizers are especially valuable. Old vines, pieces of leather and wood ashes can nearly always be applied with benefit. With a young vine care must be taken at first not to allow it to mature too much fruit. Nearly all young, thrifty vines will set more fruit than it should be allowed to mature. The remedy is to thin out some after the fruit has set. A good sprinkling of air slacked lime or copperas under the vine is a good preventative of mildew. Spraying in good season will often aid to prevent rot.

During the early part of the season, and especially with young vines, thorough cultivation should be given, keeping the soil in a good tilth and clear of weeds and grass. The greater part of the work can, of course, be done with the horse cultivator, but some work will need to be done with the hoe, if clean cultivation is given around the vines. Care must be taken not to prune too much while the vine is growing. The plants breathe through the leaves, and if too many of these are taken off while growing, the plant will be injured.

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Worms in Fowls.

Internal worms in fowls whether located in the gizzard or elsewhere, require the same kind of treatment that would be given any other animal so afflicted. A good vermifuge to bring away the worms is what is needed. Castor oil followed by sulphur in soft food may accomplish it. Or a worm capsule, such as is administered to puppies, would be likely to drive out the intruders. If any of our readers have had any experience in treating fowls for worms, we should be pleased to hear from them.—*Fanciers' Monthly*.

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OUR HORTICULTURAL RECORD.

Societies are invited to make free use of these columns. Communicate with each other. Let us endeavor to work together. In union there is strength.

WORCESTER, MASS.

The Horticultural Society's rose show was held June 23, and although the rain came down in torrents, there was a very fair attendance. The roses were not quite up to the standard, and this seems to be the case everywhere in this vicinity, caused no doubt by the open winter and dry spring.

For the best 12 blooms H. F. A. Lange took first and Joseph Brierly second. In this class Baroness Rothschild, Merveille de Lyon and Ulrich Brunner were among the best.

For best 6 blooms Joseph Brierly took first with nearly the same varieties he showed in his 12; D. E. Wilson, second.

The stands of 38 blooms each made a very good showing, as they were grouped so close that the defects in the individual blooms were not noticeable. Lange first; Brierly second.

There was one very good stand of moss roses exhibited by H. A. Jones. A great fault in the baskets is that the stuff was jammed in too close. The only loose arrangement was that of Lange, who captured first with a basket of Baroness and Merveille de Lyon with a bunch of Fisher Holmes on the handle.

O. B. Hadwen occupied a table with a handsome arrangement of pink and white paeonias, and F. A. Blake, of Rochdale, made a splendid display of *Dianthus barbatus*, showing over 100 varieties without a duplicate.

NEWPORT, R. I.

The rose and strawberry show of the Newport Horticultural Society, on June 29, 30, was a gratifying success. The displays of palms from J. S. Cowles, Andrew Meikle and Chas. D. Stark, as well as the general display by Robert Hunnuck, were unusually fine. Hugh Williamson, Joseph Magee, Gibson Bros. and others received many prizes for roses, and Siebrecht & Wadley showed some fine ornamentals. From Shady Hill Nurseries, Woolson & Co. and Pitcher & Manda came extensive collections of hardy herbaceous plants.

BOSTON, MASS.

The regular Saturday shows of the Massachusetts Horticultural Society commenced on July 24, and will continue weekly through the summer.

OXFORD, PA.

At the regular monthly meeting of the Chester County Carnation Society, held May 7th at the W. C. T. U. rooms, a fine display of seedling carnations was made by various members. Lawrence Thompson showed a pink seedling, a cross of Grace Wilder with Chester pride. Edw. Swayne showed No. 3, a light pink of Daybreak type. Mr. Skelton showed three seedlings and a fine deep pink sport of Grace Wilder. C. J. Pennock showed several—one white, a cross between Portia and Lamborn, of fine form, white, slightly tinted with rosy pink; a scarlet, full on long, stiff stem, a cross be-

tween Grace Wilder and Portia; and one monstrosity, four inches across, resembling a peony. E. B. Jennings sent Orange Blossom and Mayflower. Both carried well, the former showing particularly well.

CHICAGO, ILL.

The project of an international chrysanthemum show in the Horticultural Building at the World's Fair next November has been abandoned. The rate of progress through the interminable red tape was so discouragingly slow, and the time was growing so short, that it was deemed the wisest course to waste no further effort on it. The Horticultural Society of Chicago will hold an exhibition of its own next November.

PINLAND, KANSAS.

On Saturday, May 21st, the Douglas County Horticultural Society held its monthly meeting in joint session with the Franklin County Horticultural Society.

The meeting was called to order by President Barnes, after which, in words of welcome and good cheer, Dr. Evatt congratulated the happy meeting by which our acquaintance was extended and our hearts enlarged. President A. Willis, of Ottawa, responded on the part of Franklin county in fitting words.

Reports from members of the condition of orchards and fruit in general was called for. The apple crop was the theme of greatest interest, and happily for the meeting we were favored with the presence of Joseph F. Wellhouse, of Fairmount, Leavenworth county, who, by the way, is the largest apple grower in the United States, if not in the world, having over 500 acres in orchard and still planting others, and whose net income in a single year was \$43,000. Mr. Wellhouse came to Kansas in 1859 with a view of going into orcharding and commenced planting, at the age of 28, stating that he had about worn out the life of one orchard and expected to wear out two or three more. He believed Kansas to be most favorably situated for the production of apples, that it could not be outdone and the only question was, that of getting them to market. The crop of this year was as yet uncertain, the cold, wet season causing much fruit to drop. He said blight in any form had not troubled them since spraying. So far the arsenical solution alone had been used, but from now on they would combine the arsenical with the sulphate of copper, the latter being destructive of the bacteria causing scale and rot. There was danger of us using the solution too strong, thereby injuring the foliage. The insect and fungoid disease can be successfully overcome by intelligently using these mixtures in spraying and not injure the foliage, which is the lungs and stomach of the tree. Mr. Willis asked as to the woolly aphid. The Judge did not regard them as a serious enemy, the trees infected seeming to thrive equally well and in time ridding themselves as the ground becomes shaded. The question of grafting on the whole root was asked, the Judge saying they had experimented in that also, and that he would

defy any one being able to distinguish any difference in the tree, either in the growth or time of bearing. He advocated little trimming and low heads.

At the afternoon session President Willis, of Ottawa, presided. Mr. H. Kelsey, of Ottawa, gave a very interesting talk on blackberries. Mr. Deming followed with a short paper on the best variety of apples for desert. The Columbian Exposition was alluded to and enjoined on all to help it with their best efforts. Mrs. Mary Lester, of Ottawa, read an excellent paper on flowers, and H. S. Filmore on raising a cherry orchard and handling the fruit, which terminated a meeting long to be remembered.

HILSDALE, MICH.

\$150 Cabbages.

At the Hillsdale Fair for 1892. The Hillsdale (Michigan) Fair will give this year for the three largest and best cabbages on exhibition there \$100 to first and \$50 to second. These we believe are the largest vegetable prizes ever offered in America. This fair also offers \$40 to the best five varieties of apples for market and \$20 for second, and the rules require only five apples of each variety to be shown. Like premiums are also offered for the best five varieties of apples for dessert and also the best five varieties for cooking.

The above and other premiums offered by this popular society are open to the world for competition. Entries will close September 27. Fair October 3, 4, 5, 6 and 7, 1892.

SAN FRANCISCO, CAL.

The flower show which closed on



NEW HYBRID STREPTOCARPUS.

New Hybrid Streptocarpus.

This beautiful new race of *Streptocarpus* originated at Kew Gardens, England, where, by careful hybridization and selection, they have been greatly improved. They are remarkable for their abundance of bloom, flowering continually for about four months in summer and early autumn. They may be grown in a warm situation out of doors during the summer months. Seedling plants, raised from seed sown in January or February,

Saturday, May 14, was, perhaps, the most successful ever held on the Pacific Coast. It was the seventh semi-annual exhibition of the State Floral Society. The collection from the Sherwood Hall nurseries, Menlo Park, created a great deal of attention, probably caused by the fact that the liberal managers of this exhibit, Messrs. H. J. Campbell and James Sproule, presented a neat bouquet of sweet peas (for which flower the firm is famed) and other flowers to every visitor.

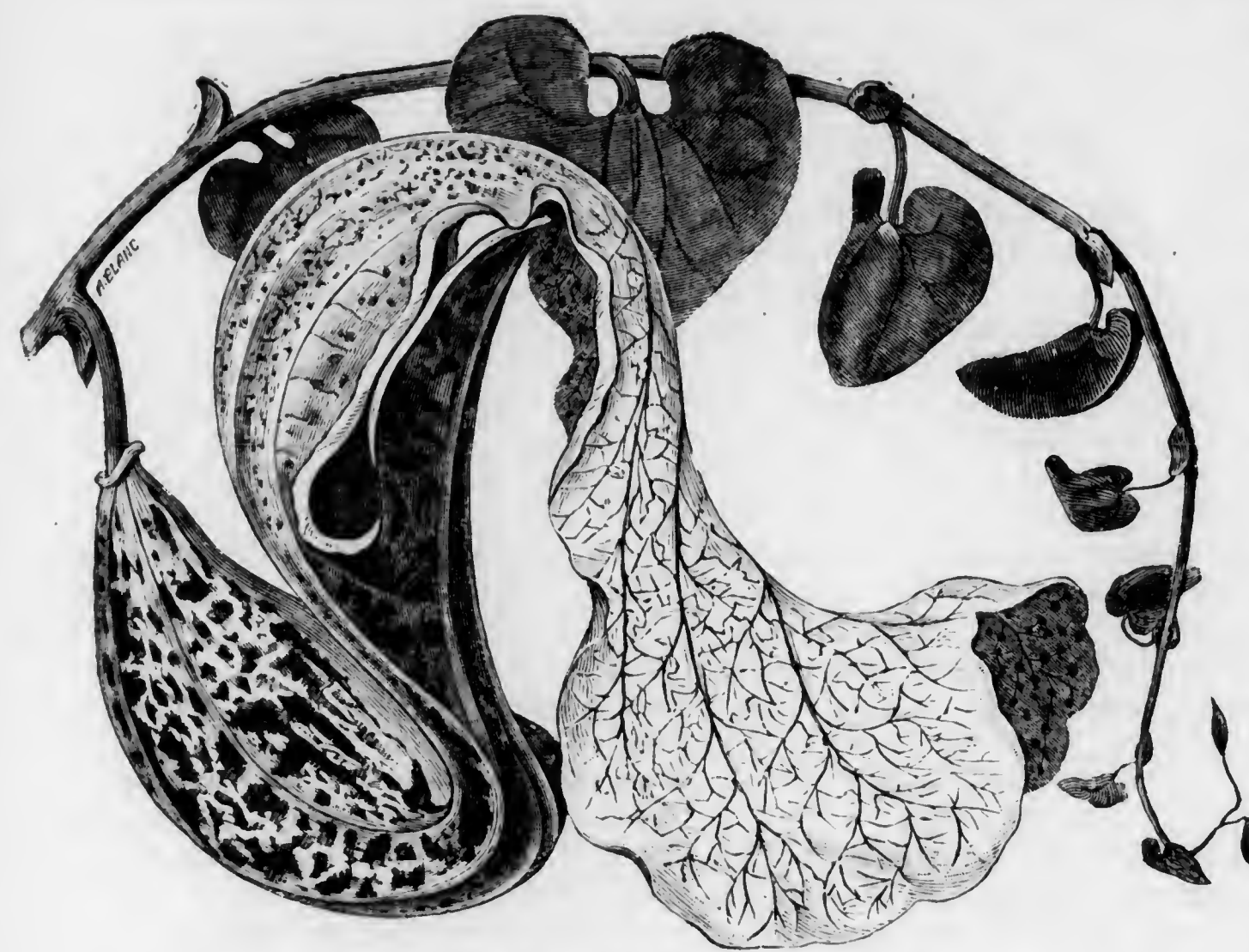
The collection of the Yokohama Gardeners' Association, of Piedmont avenue, Oakland; John H. Sievers, 25 Post street; the Western Nursery, Greenwich street, between Franklin and Gough; F. A. Miller, 215 Hayes street, and the West Berkeley Rose Nursery were exceedingly tasteful and elicited expressions of admiration from all visitors.

Among the principal prize takers were F. Ludeman, Mrs. H. Brandenmuhl, John H. Sievers, California Nursery Company, Sherwood Hall Nurseries, F. A. Miller, Charles Abraham, S. A. Carbone and Pacific Heights Nursery.

The *Rural and Poultry World* is a very neat and practical journal, published at 50 cents a year. Anticipating the wants of our readers, we have made arrangements to supply the *Rural and Poultry World* and *FARM & VINEYARD*, both one whole year for 50 cents.

Don't subscribe to any paper till you have written to us for our prices. In most all cases we can give you two papers for the price of one.

will produce from two to five blooms on a stem the first season, and will probably throw up from fifteen to thirty spikes, increasing in quantity and improving in quality as the plants become older. In the greenhouse the *Streptocarpus* does best potted in a light sandy soil, and should be given plenty of heat from March to July, after which a cool greenhouse or a sheltered place in the open air will preserve its flowers for a longer time. Like all other greenhouse herbaceous perennials, they should have rest during the winter months.



ARISTOLOCHIA CYMBIFERA—(Boat-Flowered.)

Aristolochia Cymbifera (Boat-Flowered).

The *Aristolochias* are all climbing plants, most of them extending their branches a long distance, although some varieties are found that are neat and compact in their growth. The flowers of all are extremely curious, generally of some lurid color, and extremely odd in shape. *Aristolochia Siphon*, the *Dutchman's Pipe*, is the best

known species in this country, being a native of the Southern States. *Aristolochia cymbifera*, the subject of our illustration, is an interesting strong-growing summer climber, attaining a height of 10 to 15 feet in one season. The flowers, which are of a most peculiar shape and over eight inches long, are borne in great profusion. The ground color is of a creamy white, marked and blotched with blackish maroon.

Useful Household Receipts.

If you like mince pies, just prepare at once all the mincemeat you will use for the next six months, make it nice and rich, then can it boiling hot in some of your glass fruit cans. Strong coffee added with the spices gives a nice flavor to the pies; strain, so that no grounds will find a place.

Have you a sweet scented geranium? Put one of the leaves on the sliced apples in your pie as a change from the usual nutmeg; the flavor is liked by many, and when the pie is cut the leaf can be removed.

Of course you have a good recipe for ginger bread. Then for a change try this variation: Substitute for your milk, on mixing, the same quantity of strong coffee, prepared as for the table; no eggs; spice can be used instead of ginger, and the cake is better if you add raisins or currants.

That can of cocoa need not all be used as a beverage; try a teaspoonful in your frosting, in blanc mange, in a pudding sauce, in Tot's home-made caramels, change the complexion of your cake with some, or make a marbled cake by adding cocoa to half of your light batter and dropping a spoonful of light and dark, alternately, in your baking tin. — *Housekeeper Weekly*.

For jelly select your fruit before it is too ripe, if possible, as it is always of much better flavor. It should be put on and brought to a heat, as the juice can be much better extracted. Have a bag made of flannel, in a funnel shape, to put the juice through. For straining it through the first time use a wire sieve with a revolving wire to

crush the fruit. The juice should always be strained twice, and comes much clearer by allowing it to hang over night and drip. Put on the juice and allow it to come to a heat, then put in the sugar which has in the meantime been heated in the oven. If it is desired to keep the color light use a very little gelatine, so that it need not cook so long. From fifteen to twenty minutes is long enough for it to cook after it begins to boil, and it should not stop till done. Better success can be had by making it in small quantities. After putting it into the glasses set them in the hot sun till cold, then cover with a piece of paraffine or writing paper directly on the jelly; another to cover the top of the glass. — *Field and Farm*.

Market Gardening.

Since the establishment of extensive truck farms in the South, and the great celery fields in Michigan and Ohio, market gardens of the North have in some respects been injuriously affected by the competition. However, the greater supply of fresh vegetables, through a greater period of the year, has materially increased consumption, especially in the smaller towns and cities. The occasional oversupply and consequent low price give even the poorest people an opportunity to purchase vegetables other than potatoes and cabbage, and so in the end the local market gardener's trade is increased, although he must accept lower prices than he has received in former years.

His profits must come through a better knowledge of his business that will enable him to produce larger and

better crops at less cost, yet, as the greatest yield can only come from land enriched and thoroughly prepared, there must be a considerable investment at the outset. Gardeners within access of a city water supply avail themselves of this means for irrigation as occasion may require, while others use windmills and tanks, but are seldom able to irrigate as fully as required in a hot, dry time when water is most needed. In some of the larger gardens, where extreme drought for two or three weeks might mean the loss of thousands of dollars, steam pump and full irrigation plants have been constructed at great expense. Thus the most complete crops are assured and these gardens are turning out products far beyond anything ever thought of by our gardeners of former generations. — *Stuart's Agriculturist*.

Useful Hints.

One of the most successful orchardists in America, in writing to a personal friend says: "If you want wood in your orchard, prune in the spring; but if it is fruit you are after, prune in August."

The first insertion of an advertisement in a medium makes but little impression; the second insertion makes a deeper impression than the first, and also helps to deepen the impression of the first; the third insertion goes still deeper, and also helps the two before it, and so on *ad infinitum*. — *Printers' Ink*.

The lemon verbena, *Aloysia citrodora*, ought to be more patronized

than it is. Time was when its merits found it a place in every garden.

Small farms usually pay best because the small leaks are more easily and certainly stopped on them. In an irrigated country the small farm is a necessity.

More grass and less grain frequently means labor and more profit. It also means more stock and richer land.

Brazil promises to become a vine-growing country, the agricultural department of Rio Grande do Sul having imported a million grapevine cuttings from Southern California.

Evergreens that have not their natural green look may be suffering from lack of food. Give them some by manuring the surface now. It is rarely thought of, but trees need manuring just as much as smaller plants do.

When you make your first venture in fruit growing do not spread too much. There are some things to learn in this business even for the man who knows all about it.

A complete collection of Ohio birds, including every variety known to live within the boundaries of the State, will be an exhibit at the exposition.

The Thompson seedling grape is growing in great favor among the viticulturists of California.

Peaches and apricots are fruited in England under glass or trained against stone walls like grapevines. They will not ripen as they do on the trees in America.

A flock of good mutton sheep is the farmer's best friend. No other class of livestock will show a larger per cent. of profit than sheep.



ARAUCARIA EXCELSA.

Araucaria Excelsa.

In the homes of the wealthy, plants for room decoration are fast growing into popular favor, and the *Araucaria Excelsa* from Norfolk Island, where it is known as the *Norfolk Island Pine*, with its symmetrical growth and deep green, finely cut foliage giving it a fern-like appearance, we consider one of the best decorative plants for the purpose. Although growing in its native

State to a height of 200 feet, it is not hardy in this country. It makes a splendid ornament for the lawn, or any position out of doors, during the summer months, but requires the protection of a greenhouse during winter. We are indebted to Mr. Henry A. Dreer, of Philadelphia, a large grower and importer of these splendid decorative plants, for the use of this cut, which is a good one, showing the small plant in its true character.



TULIP POPPY—(Papaver Glaucum.)

Tulip Poppy (Papaver Glaucum).

From a mere description, no adequate idea can be gained of the strikingly beautiful effect presented by a bed or mass of this magnificent *Poppy* when the plants are in full bloom, the color being, even when seen from a distance, of such a glowing scarlet as

to perfectly dazzle the eye, suggesting at once a bed of *Scarlet Tulips*; hence the appropriateness of the name. The plants grow 14 inches high, and produce from 50 to 60 flowers, well above the foliage. The above illustration, taken from the catalogue of Mr. Henry A. Dreer, the Philadelphia seedsman, gives but a faint idea of the beauty of these beautiful *Poppies*.

How Grapes Are Propagated in California.

A correspondent writing to *Rural New Yorker* says: "We propagate by cuttings, which can be bought at \$1 to \$1.25 per 1,000, or one can go on a vineyard and cut his own cuttings if he undertakes to clean up the brush after him. The vines are pruned from February 1 to the end of March, and the cuttings are taken directly afterwards. The length of the cuttings will depend on the variety and distances of the buds apart. Those from the Muscat Muscatelle, English Alexandria, etc., are from 10 inches to 14 inches, those from the Malaga and long-jointed vines from 12 to 18 inches. When the cuttings are cut they are tied in bundles of 100 and a trench 3 1/2 to 4 feet deep is dug in a moist, cool place, and the cuttings are put in and covered as deep as possible. About the middle of March we begin to set them to root. For planting I like sandy land, as they grow better and have more roots there than in heavier soils. When the land has been well plowed and allowed to settle, plow three furrows with a 12-inch plow at about one-fourth the width of the field, and deepen the last furrow with an Oliver B. V. vineyard plow. Do the same at the same distance from the other side. While the team is plowing in the second land three men will be able to plant the first. When that is planted the team comes to cover the vines, which are two inches apart and with one bud above the surface, plowing three furrows around the land and deepening as before, while the men plant the other land and so on. When the vines are planted out for a vineyard the holes are dug and the vines put in immediately at a distance of 8 to 10 feet each way.

Here they do not use trellises for vineyards. Most of the raisin grapes are cultivated to a height of two feet from the ground and the wine grapes to four feet in height. The Sultana and white wine grapes are cultivated high, are tied to 2x2 inch cedar stakes about eight feet out of the ground so that the land can be plowed and cross-plowed until the grapes are matured. Here there is no snow at any time and no rain during May, June, July, August, September and October and the vines have to be irrigated every month.

Rosebug Bait.

The object in planting spiraeas in the vineyard or garden where grapevines are growing is for the purpose of attracting the rosebug or rose beetle. This insect, as is well known, is very fond of the flowers of the grape and will soon destroy them, and therefore cut off the crop of the fruit; but they are also very fond of and seem to prefer the flowers of certain species of the spiraea. They will usually desert the grapes, and cluster upon the spiraeas if afforded an opportunity, and, as these shrubs and herbaceous plants cost little or nothing, we may use them freely as bug traps or bait, and from which the insects may be shaken daily into hot water or a little kerosene and water. The two best species of the spiraea for this purpose are the Sorbus-leaved, a hardy, early blooming shrub from Siberia, and the Goats-beard, a native vigorous growing herbaceous species. There are also several Japan species, with fine white flowers, and blooming at the same season as the grape that may also be employed for the same purpose, but the two we have named seem to answer every purpose. — *American Agriculturist*.

Some Practical Facts About Capons.

By GEORGE Q. DOW.

FOR THE FARM AND VINEYARD.

Everybody who grows chickens for the market, and do not make capons of their cockerels, are losing just about one dollar on each male bird they sell, or, in other words, they are not receiving so much money by a dollar each for their male birds as they might have, had they caponized them. This seems like a pretty broad assertion, but it is the solid truth, which any one can demonstrate for themselves.

Last year a friend of mine told me he guessed he would keep a lot of cockerels to dress and send to market in February, as the markets were crowded in December, and he thought he could get better prices.

"All right," I said, "but it is a great pity you had not made capons of those birds, for they then would have brought you a lot of money. When you send your birds in let me know, and I shall send in some of my capons at the same time, just to show you the difference in price."

When the time came about, he told me he was going to kill and dress his birds next day. So I arranged to dress some capons, and we sent our birds in—neither of us having made a market beforehand, but the birds were to go for what the market would pay. They were all Plymouth Rocks, pure stock. His cockerels averaged seven pounds, and my capons averaged a little over ten pounds. Both lots were hatched about the same time. When the returns came in, it was found that his chickens brought 14 cents a pound, or 98 cents each, while my capons brought 22 cents a pound, and came to \$2.25 each.

This man calculated his cockerels had cost him 75 cents. I had kept a careful account of the cost of my capons, and, without any guesswork

about it, know they cost me just 80 cents to grow.

Here he was making a profit of 23 cents on his birds, while by the simple act of caponizing (nothing else) I was making a profit of \$1.45 on each bird, more than I ever made on any hen in my life.

Talk about the profits in poultry raising! Where can one make a surer or safer profit in that business than in growing capons? This friend of mine has found out to his satisfaction, and this year has no cockerel chicks to sell; but, in their place, has over one hundred fine capons about ready for the market, which are sure to give him a good, clean hundred dollars profit, and probably more.

Any of your readers are at liberty to write me for any information about caponizing.

NORTH EPPING, N. H.

Taking a Rest.

After the harvesting is finished up and the corn laid by, the farmers need to take a good rest. Not that there is nothing to do. On the average farm there is always plenty to be done; but the farmer needs a little recreation, and after the harvest work is finished up is a good time to take a rest. Commencing with the work of sowing the oats in the spring, there is usually but little time to rest until after harvest. There is no reason why the farmer should make a slave of himself, or of his family. Work when it is necessary, and rest when it can be done without detriment to the farm. Farm life can be made enjoyable, or it can be made a drudge, as managed, and we can hardly blame the boys and girls for leaving the farm when it is all work and no play.

The eighth annual meeting of the Society of American Florists will be held at Washington D. C., August 16, 17, 18 and 19, 1892. It is said this meeting will be the largest the society has ever held. ETE



PHYSIANTHUS ALBENS—(Cruel Plant.)

Physianthus Albens (Cruel Plant.)

A rapid growing climber, bearing bell shaped white flowers, which are covered with a gummy substance.

Butterflies and other insects which alight thereon are unable to free themselves, hence the common name, *Cruel Plant*.

FRUIT AND FLOWERS

NEW PANSIES.

Report Made to the Society of American Florists.

In his report on new pansies, Mr. D. Zingibell, of Massachusetts, said:

There are good old English and Scotch strains that the German seedsmen and florists have got hold of and subdivided into over so many colors and varieties, but they practically remain the same thing, and I do not see that any improvement has been made in them, except in the catalogues by rechristening them. A really new strain is the Trimardeaux, originated by a florist near Paris, France, but it has been greatly improved since then. These pansies are very large in all their proportions, flowers and foliage, and, too, very hardy, standing well extremes of both heat and cold, and they give general satisfaction all over the country.

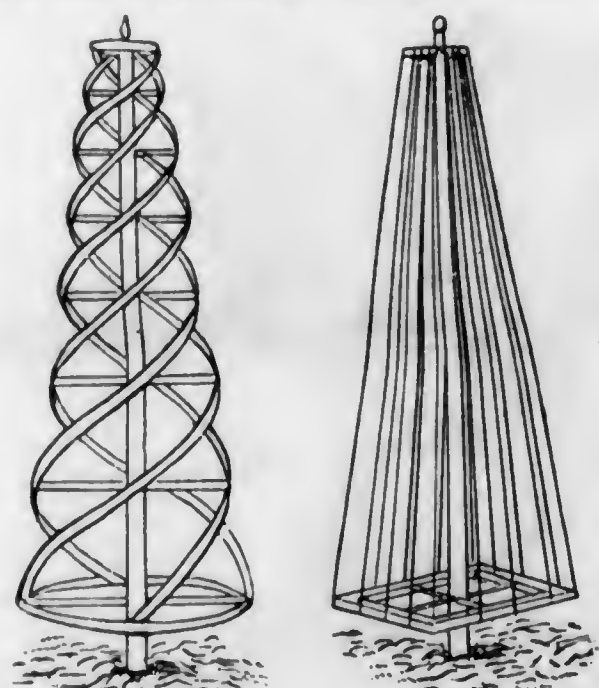
Another new strain, also of French origin, is the odier, or five spotted varieties, which of late years have been greatly improved on by the well known specialists, Cassier and Bugnot, the latter especially introducing new shades of color and flowers which would have been thought impossible a few years ago. These last strains, however, are by no means as hardy as other strains, owing, I suppose, to closer breeding.

These two races are the only really new varieties that have been introduced within the past few years, and that are, in my opinion, of any merit, and I have come to this conclusion after having tried, within the past few years, everything of note in the pansy line.

Homemade Trellises.

Here are two good trellises for annual climbers that are very easily made. The illustrations here reproduced from Popular Gardening render a description almost unnecessary:

To make a trellis such as Fig. 1, first select a stout stake of desirable height. Allow for driving it into the ground. Bore holes at certain distances and in-



TRELLISES FOR ANNUAL CLIMBERS.

sert pegs about six inches long on top and then gradually longer downward. Take hoops, such as come from sugar barrels, etc., and nail one around the bottom pegs and others in a spiral manner up toward the top, as shown in the illustration. Paint any color, according to taste. The remaining trellis is made as follows: Take a stake and fasten a square frame at top and a larger one at the bottom and drive nails close together all around the frame, both at top and bottom. Then take stout twine and run up and down all around, and you have a fine trellis for cypress vine or morning glories and other climbers.

The World's Columbian Exposition.

A special display of sugar-beets will be made during the two weeks beginning Monday, October 9, 1893.

A special display of potatoes and other tubers will be made during the two weeks beginning Monday, September 11, 1893.

Regulations for exhibitors in the several departments of the Exposition have been issued and can be obtained by all intending exhibitors by applying for them, either in person or by mail.

Iowa, in its exhibits at the Exposition, will show the various forms in which corn products are useful as food, and also the processes of their preparation.

The Horticultural Department of the Exposition is planning to have a magnificent rose garden in which will be fully 50,000 plants, besides large groups in special areas. The garden will be of classic design with temples, arbors, archways and trellises.

Members of the Farmers' Alliance in Kosciusko County, Ind., at a recent meeting in Warsaw, decided to assess themselves weekly to provide a fund to defray their expenses for a visit to the World's Fair. About 400 farmers and their wives will compose the visiting party.

Celery Culture.

In the old world almost every one is an amateur gardener, and unless they could grow their fruits or vegetables superior to what they could find in the market they would feel very badly about it. Celery culture is especially a point with these amateurs. They find by experience that a great deal of the success in growing fine vegetables depends on getting very healthy plants to start with. They do not sow their celery seed bed, and then draw out the plants for their final plantations, as so many do with us. Some of our growers do a little better than this, however, by transplanting their celery plants once before getting them out; but the enthusiastic English amateur is not even satisfied with this, but puts his plants as soon as they can be safely handled each into a small pot, so as to get them stocky, and well established, before setting them out in the open ground. Large numbers of these small growers, who have only room for two or three dozen plants, will have these plants, which they first raise in boxes in the windows, all ready to re-pot and set out in August. It is amazing what enormously large and succulent stalks of celery can be raised by a little extra care in this way.—*Mechanics' Monthly*.

Remember, all our articles on Grape matters are written by men who are in the business themselves and know what they are talking about. The information contained in this number alone is worth more than our annual subscription price of 25 cents to any one who is in the least interested in this industry. Subscribe NOW and keep abreast of the times.

FRUIT AND FLOWERS

RASPBERRIES.

Varieties Worth of Trial—A New Hardy Variety—Culture Notes.

The raspberry has an advantage over the strawberry—a plantation once set, if properly handled, will last for several years, while the strawberry patch ought to be renewed biannually. It is very important in raspberry culture that hardy varieties be selected. Numbered with new varieties that appear to possess unusual vigor is the Kansas, here illustrated, and which is reported to withstand the trying climate of Kansas and other states where raspberry culture is carried on with difficulty. Another no-



THE KANSAS RASPBERRY.

ticeable feature is the extreme readiness with which the plant makes tips. The Kansas, a choice seedling, is an early blackcap, somewhat resembling Gregg, but the fruit is larger and of better color. The flavor is excellent and the fruit firm enough to ship well.

Other new varieties considered worthy of notice by the department pomologist are Hiram, Extra Late and Perfection. The last named originated in Wisconsin and is said to be a cross between Cuthbert and Turner—a handsome berry and productive, though not so firm as Cuthbert. Among the tested berries Tyler, Souhegan and Gregg are conspicuous as good blackcaps. Many growers name as the best red berries Cuthbert, Marlboro and Hansel.

Don't set your raspberry rows too close together. Lyman A. Abbott says that seven feet is near enough to set raspberry rows. George T. Powell says, "Do not fertilize raspberries with barnyard manure after the canes begin to bear, but apply wood ashes and ground bone." Raspberries require vigorous pruning to induce large yield of berries. Do not let the canes become scrawly and bushy for the want of a knife. Prune in fall or early spring, as best suits your special locality.

Summer Layering the Grapevine.

When the vineyard is not too old and one wishes to propagate some vines from it by summer layering, it may be done without taxing the vine sufficiently to injure it, says Orchard and Garden, which gives the following directions for so doing: A good cane should be allowed to grow along the ground until about six feet long, then nip the point off, which will soon start the laterals; these will be upright, and when near a foot high dig a trench four inches deep, lay the vine in the bottom, first cutting off the tendrils and leaf at the base. Cover with a few inches of soil and press firm-

ly, and in a few weeks fill up the trench level with the surface of the ground. If the variety is a short jointed one, every alternate lateral should be broken out.

If some of the shoots seem to take the lead too much, it will be well to give them a pinch and throw more of the force into the others. By fall these will be well rooted and each shoot will have sufficient roots to pass for a good vine; not more than ten of these should be grown from one vine, however.

Evergreens.

At a meeting of Iowa horticulturists a member present read a paper on the threefold use of evergreens—as ornaments, as shade and as timber. He said: "We see spruces planted in front of houses, shutting out all sight of them from the road. This is wrong. Trees of this class should be placed behind the house to form a background. In front of the house should be planted only such trees as will be ornamental and will not hide it from sight. For shade a number of varieties can be used to advantage. If it be desired to grow a shade tree in the least possible time plant Norway pine or pitch pine. Now as to evergreens for timber. If seasoned lumber is desired I would not advise any to plant evergreens, but if post timber is desired plant red cedar and cultivate it well for at least two years. At the end of that time the trees will be making a good, strong growth."

Horticultural Notes.

Look out for the tent caterpillar.

When there is tendency to scab spray the apple trees.

The old strawberry bed, if too foul to be kept over, should be mowed and burned over before turning under to destroy insect pests. Plow deeply and sow to turnips or plant with late cabbage. Select a fresh spot for the new bed.

American Gardening advises that both deciduous and evergreen hedges be sown as soon as the present season's growth begins to harden. This checks growth without injury to the plants.

The acreage devoted to vineyards this year in California is far short of that of last year. California Fruit Grower says that those who did plant vines showed a marked preference for some of the seedless varieties, usually the Sultan or the Thompson. Pineapple growing in that state has not as yet reached such proportions as to justify the statement that it can be made a success.

Cut Off the Faded Roses.

It is an excellent practice to cut off the flowers from rose plants as these fade. There is nothing that exhausts plants more than the production of seed, and when flowers are left to go to seed it is just so much drawn from the vigor of the plant. Meehan says that in the case of roses the class known as hybrid perpetuals, or ever blooming roses, rarely ever flower in the fall freely, unless the flowers are cut off as the petals fade. The new flowers of autumn have to be produced from young wood, which starts from the spring flowering branch, and the sooner the faded flowers are cut away the sooner these buds proceed to produce blossoms. In fact, it is only where the faded rose blossoms are cut off as fast as they fade that the plants flower very freely again in the autumn of the year.

Hardy pyrethrum form valuable additions to the list of hardy herbaceous plants.

The Thomas Hogg hydrangea bears white flowers.

The Charlotte Chushman gladiolus is a brilliant scarlet, with white throat and white line in each petal.



NEPENTHES—(Pitcher Plants.)

Nepenthes (Pitcher Plants).

Among the many curious forms which abound in the vegetable kingdom, perhaps few arrest more general attention than do the members of this genus. Connected with the point of the leaf by the means of a long pendant strap like ligament, hangs a hollow tube, sometimes of the color and consistency of the leaf, shaped much in the manner of some antique vase, which will hold from half a pint to near a quart of water, and extending over the mouth of which is what may be readily likened to a lid, the whole hanging loosely by the strap before mentioned. This extraordinary appendage to the apex of each leaf has obtained for it the appropriate appellation of the *Pitcher Plant*. They require similar treatment to what is usual for *East Indian Orchids*. Leaf mould, with an equal quantity of decaying sphagnum moss, appears the most proper medium for their roots, and, with a damp atmosphere of about 80 degrees in summer, they grow vigorously.

Reduce the heat and moisture in winter.

There are several very curious and beautiful varieties in commerce, quite a number of remarkably beautiful hybrids having been introduced within the past few years from seed.

To the believers in the Darwinian theory of insect eating plants, the *Pitcher Plants* offer a good argument. In nearly all the varieties a fluid is found at the bottom of the "pitchers," that seems to attract—and at the same time poison—ants that flock to it in immense numbers, sometimes as many as a thousand of these little insects being found in a single "pitcher." Mr. William Smith, of the Botanic Gardens at Washington, D. C., is said to hold the belief that the fluid intoxicates the insects.

Propagation is effected by taking the offsets produced near the stem of the old plant. These should be potted in the compost before mentioned, and placed in the warmest part of the house, where, if there is a strong heat, they soon establish themselves.

STRAWBERRIES.

Cultural Notes from Well Known Fruit Growers.

Next to early spring transplanting, Country Gentleman has found the season immediately succeeding the bearing of a fruit crop a good time for setting out garden beds. Even in seasons of drought plants do well if the work of transplanting be well done. Lift the plants with the spade, shake off the earth without pulling or tearing them, cut off such of the roots as are over three or four inches long, leaving a circle six or eight inches in diameter, spread these in setting, cover with fine earth, settle with water if the soil is dry, add an inch or two of crumbled earth, and another inch or two of fine manure. If necessary drench the whole. The manure will keep the surface from crusting and maintain needed moisture. All the old and large leaves should be cut off before setting, and the young opening leaves only remain. These plants will grow vigorously through autumn and bear another year.

Barry recommends for family use planting in beds four feet wide, with an alley two feet wide between. These beds will accommodate three rows of plants, which may stand fifteen inches apart each way, and the outside row nine inches from the alley. "The beds can be kept clean and the fruit can be gathered from them without setting the feet upon them."

The following are described under the head of "Six Big Strawberries," by Lovett: Beebe, a prolific bearer of very large berries that ripen in midseason; Jucunda Improved, a reproduction of the good old Jucunda, that begins to ripen early, continuing until late; Iowa Beauty, exceptionally perfect in form and color and ripening in midseason; Lovett's Early, one of the most valuable of the early varieties; Shuster's Gem, very productive and a good sort for a main crop; Gandy, extra firm, latest of all to ripen, and unequaled for canning purposes.

The Transcendent is a beautiful variety of the Siberian crab apple.

FRUIT AND FLOWERS

BEST NEW CHRYSANTHEMUMS.

A List Reported by the Secretary of the National Chrysanthemum Society.

In a report to the Western New York Horticultural Society, Secretary Lonsdale names these as among the best of the new chrysanthemums:

Louis Bochner—Light purple, hairy, like the Mrs. Phelps Hardy. Plant very vigorous. Mermaid—Delicate pink; very good. Frank Thomson—Not Mrs. Frank Thompson—White, shaded with delicate pink. Vigorous. Mrs. Isaac D. Sailer—Silver pink. Winner of the "Sailer prize" at Philadelphia, November, 1890. Mrs. J. D. Willidin—Light yellow. Winner of the "Willidin prize" at Philadelphia. Eldorado—Deep yellow; incurved broad petals.

Mrs. D. D. L. Farson—Rich silver pink. John Firth—Soft pink. Lily Bates—Bright pink. Anna M. Weybrecht—Pure white; Chinese form.

Target—Bright crimson; similar to Cullingford or Tokio (exhibited in Philadelphia under the name of Shenandoah). Yonitza—White Chinese; distinct.

Mrs. H. A. Pennock—Might be described as a yellow violet rose.

Beacon—Creamy white; an improvement on the Mrs. Langtry. Winner of silver medal at Boston.

Waban—Pink. A very much improved Robert Crawford, Jr.

Mrs. John Westcott—Creamy white, shaded with delicate pink; very large.

Flora Hill—White. Extra fine variety.

Mrs. E. W. Wood—Rich dark purple. Very distinct.

James H. Freedland—Bluish; petals broad, flower large. Beautiful.

A Rustic Bridge.

The water view here shown appeared originally in The Gardeners' Chronicle, and demonstrates what a charming effect may be contributed by tastefully constructed rustic work.

Not only is such a bridge one of the most appropriate that could be employed in a scene of this character, but it should be by far the cheapest bridge to con-



AN EFFECTIVE RUSTIC BRIDGE.

struct. The owner of the place or his gardener ought to be ingenious enough to build a substantial affair of the kind, while the material need not be difficult to obtain. The best time to cut wood for rustic purposes is in the last half of the winter, which gives it time to season gradually, and without bad cracking before summer, when wanted for use.

Protecting Trees from Sunburn.

E. M. Ehrhorn, at a meeting of the California State Horticultural Society, said, in reply to a question:

"It is not necessary to wrap trees to protect them against sunburn if the trees are planted with the same side to the sun as in the nursery. Trees are generally budded on the north side, hence it is easy to arrange them in the orchard so that the thicker bark shall continue to face the sun. Trees thus planted seldom or never sunburn in the coast counties, but might require some further protection in the hotter, interior valleys."

A correspondent of The Prairie Farmer, who thinks that the injury from sun scald occurs during the season of planting, though not so apparent as two years later, advises the following device for protection: Provide eight laths and use small wire. Weave the laths with the wire and encircle the tree. This protector is made in a few minutes and will last till the tree needs no further protection. This will prevent injury from sun scald, borers, rabbits, mice, whiffletrees, calves, sheep and hogs, costs three to five cents a tree and will last eight years.

Fancy Gourd Baskets.

Fancy gourds have all at once assumed unusual importance. These are grown in many gardens for an ornamental effect, and now, Vick tells us, in his illustrated magazine, how to utilize the gourds by transforming them into baskets and vases for flowers and ferns. He says:

Apple or cherry boughs of odd shape are first wired or otherwise formed into a sort of cradle or standard. Into this



GOULD BASKETS FOR FLOWERS.

a gourd is securely fastened and lined with tinfoil to prevent the moisture from leaking through. It is then filled with sphagnum or moss and the flowers arrayed therein.

In making the baskets two or three can be combined in one group, one for live ferns and two for flowers. The old fashioned dipper gourd and the Heracles' club are the best for the larger vases. The gourds form a numerous family, and are exceedingly dissimilar in character, thereby affording a wide selection as regards size and form. They should be planted in different parts of the garden, and will grow in almost any old place where nothing else will succeed.

Floral Brevities.

Phlox, when the shoots are pinched in June and again in July, will flower in September.

For a low, ornamental hedge, the Tom Thumb arbor vite is useful.

Buffalo Bill, a new geranium, produces immense spherical trusses of semi-double flowers; color, white shaded bluish. A good bedding variety.

Mme. Crozy is still queen among Camas.

Clematis Fremontii is not only perfectly hardy, but adapts itself to any garden soil.

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The LEVERETTE SPECIFIC CO., 933 Washington St., Boston, Mass.

A New System of Working Bees.

A new system of working bees, by Mr. Wells, is making some stir in England. He puts two colonies side by side, with a perforated dummy between and queen-excluder over, having both colonies work in the same supers, and reports great success. But it seems to increase the tendency to swarm.

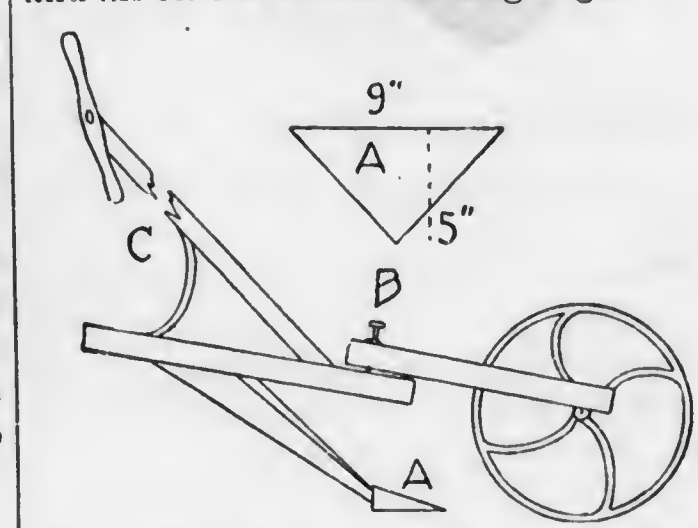


A USEFUL GARDEN TOOL.

It Does Thorough Work and Cuts Off Every Weed, Large or Small.

In the cut is depicted a garden implement made and used by a New York correspondent, who describes his handiwork in The New England Homestead as follows:

For easy, fast and thorough work it is far ahead of anything I have seen. It leaves the ground perfectly smooth, and every weed, large or small, is cut off and left on top of the ground to wilt and wither, and not partly buried so that some of them can start to grow again. The cutting blade, A, was made of a piece of crosscut saw, and by making just right will not clog. It is nine inches wide on the back edge and five inches from the front point to the back. It must be filed with quite a bevel and good edge, and all on one side of cutting edge.



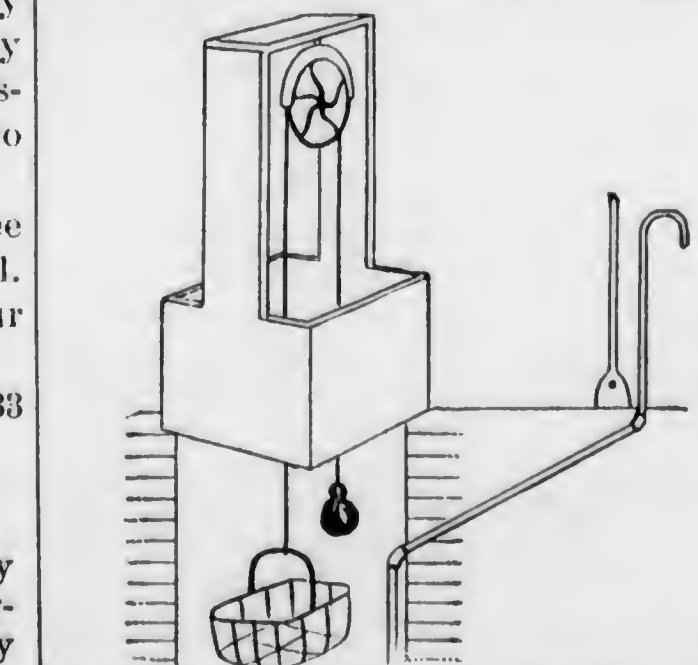
A CULTIVATOR THAT IS DEATH TO WEEDS.

When putting it on the cultivator be sure and set the bevel edge up so it will hold to the ground; also get the cutter so that it will run perfectly level in the ground. You will find you will have the easiest working tool and the worst enemy to weeds you ever dreamed of. The cultivator is adjusted by turning the thumb bolt, B, and can be made to cut deep or shallow, as the wheel arms work on a hinge or bolt a little ahead of the thumb bolt. To adjust the handle to suit people of certain heights and to make the cutter run level there is a slot in the brace at C which will allow the handle to be raised or lowered and also keep the cutter running level.

Keeping Butter in the Well.

Many of the wells throughout the country have been supplied with a pump and the bucket discarded.

The Philadelphia Farm Journal suggests that instead of planking over the well the pipe may enter the ground and slope beyond the curb, where the pump may be placed, and the wheel and weight may support a basket made of old wagon



BASKET SUPPORTED BY WHEEL AND WEIGHT.

tire. In this may be placed butter and other things that must be kept cool, including the milk from a small dairy.

The balance weight must be placed on the rope so that neither it nor the basket will enter the water. This plan is a suggestive one, and will no doubt be improved upon by some of our more ingenious readers in the way of a cold box with a lid and shelves in place of the basket. The plan, however, just as it stands, is valuable, inasmuch as readers who are not especially ingenious may avail themselves of it. This or a similar device is essential on farms not provided with icehouses.

Chicken Gapes and Dysentery.

To cure the gapes Prairie Farmer advises: "Strip a small quill feather to within half an inch of the end. Dip the end in spirits of turpentine and insert into the windpipe at the base of the tongue. Turn it around once or twice and withdraw. Repeat again next day if relief is not obtained. Feed on soft food well mixed with black pepper, and give skim milk to drink. Keep the fowls in a dry place."

For the dysentery that follows up neglected diarrhea in chicks, a correspondent in the New York World says: "In dysentery the evacuations are colored with blood. Give three drops of laudanum in water every three hours, and a teaspoonful of strong cinnamon tea every hour in place of water. Feed only rice boiled in milk."

How to Break a Sitting Hen.

An old and experienced breeder tells that his plan of curing hens of the desire to set is neither to coop them up nor starve nor duck them in a water butt, nor place them in a coop with a sparrow bottom. What he does, and he finds it an unending remedy, is to transfer the broody hen to another pen, with a different lord and master. In a short time the desire to set leaves her, and she goes on laying within a week or ten days. By adopting this plan he has been saved the nuisance of broody hens.

In the Pigeon.

One may judge of the character of the coming litter to a great extent by the appearance and character of the dam, according to a recent writer. If she is over fat, sluggish and indisposed the pigs will generally be small and puny and possess little vitality, and the chances are a large per cent. will die in infancy. Sows that rear less than six pigs out of each litter on an average are unprofitable breeders, and should be consigned to the feeding pens.

Among the Fruits.

Trees of Lincoln plum ought not be allowed to bear all they set. At least one-half the fruit should be taken off as soon as half grown.

The gooseberry requires annual manuring to sustain its vigor. The American varieties require pruning every year. The English kinds require but little pruning. Gooseberries may be planted spring or fall.

Before the strawberries begin to ripen the ground ought to be mulched with short hay, straw or grass mowings to keep the fruit clean.

As a rule, after the strawberry bed has given two full crops it should be spaded or plowed down, a new one in the meantime having been prepared to take its place.

The Wilson Junior blackberry ripens earlier than its parent, Wilson's Early, and is said to be more productive.

The best and most reliable winter pear, all things considered, is the Anjou. For late fall and early winter the Duchesse is also indispensable. This we would grow as dwarf, the former as standard, says American Gardening.



BEDDING WITH FOLIAGE PLANTS.

A Style of Garden Adornment Suited to City and Village Lawns.

The garden shown in the accompanying cut illustrates the fine effects produced with foliage of plants. This view was photographed last August and recently appeared in American Gardening, which says of it:

One ornamental bed, prominent by its graceful curves and points, was filled with Echeveria secunda glauca in the central parts, Alternanthera versicolor for dark foliage and A. aurea nana, the well known variety of golden hue. A large four pointed bed was filled with the two brilliant coleuses, Golden Bed-



CARPET BEDDING.

der and Verschaffeltii. The other plants toward the edges were Alternanthera negro, A. parychoides and Santolina argyrea. The center plant was a good sized specimen of Dracena brasiliensis. The same classes of plants in very different varieties and colors were used for the other foliage beds.

These and other instances of fine but unpretentious carpet bedding furnish a style of garden adornment suited to city lawns and plats. The neatness of the design and the brightness of the colors used in such work remain with us at the height of beauty longer and give more pleasure for the outlay than the same amount spent for coarse growing annuals and other plants that lack neatness of appearance.

Geraniums, coleuses, etc., look well planted around the piazza and fences. For the small plat especially are recommended boxes filled with vines and flowering plants displayed to suit the individual taste. Rustic tubs or vases filled in like manner add charms to the place. Wistarias, honeysuckles and clematises should be more used in beautifying the home.

A Test with Watermelons.

In an experiment with reference to the relative productiveness of seeds from different parts of the watermelon by Messrs. Newman and Clayton, agriculturists of the Alabama station, the seeds from the stem and blossom ends produced in each case 435 merchantable melons per acre, while the seeds from the middle produced 507 per acre, weighing over two tons more than those from the ends. Six-sevenths of the melons from the "middle" seed were ripe Aug. 4, while only one-half of those from the "stem end" seed were ripe Aug. 11. Tabulated data are given for nineteen varieties in 1891. The greatest variation in the ripening of these varieties was

only six days. The seed of a number of varieties which had been kept since 1888 failed to germinate. As a combination variety for home use and market the Jones melon ranks first. It is not so good for shipping as the Kolb Gem, but superior in quality. The Sugarloaf gives greatest satisfaction for home consumption. Of twenty-five varieties of cantaloupes those reported as best in flavor are Atlantic City, Golden Jenny, Improved Pineapple, Nettle Gem and Nettle Nutmeg.

The Phlox Drummondii.

Expensive packets of seeds yield flowers of various colors, that with very little care in cultivation will repay better than most annuals. Peter Henderson used to say that the plants should be thinned to a foot apart for best results.

The phlox should be well watered in dry weather. Any slight shading, if at hand, will benefit newly set plants. When established, a little good soil can with advantage be drawn around the base of the stem and the leader nipped out, thus inducing a more robust and branching growth than will generally be found in annuals.

Ferns and Wild Flowers.

Ferns and wild flowers are excellent material for brightening shady and dingy corners. Give them a light and well drained soil. Many native ferns are highly ornamental and require only a little care in watering in the dry season, slight protection in winter and an occasional light top dressing of manure.

What Horticulturists Say.

The Centennial cherry is a new and promising variety.

Snow White is a superior variety of white gladioli.

An announcement comes from the West Virginia agricultural station of the discovery of a perfectly thornless raspberry.

Mr. Ellwanger says that the Anjou, Winter Nelis and Beurre Clairgeau are the best winter pears.

Fuchsias require warmth, moisture and a little shade.

Numbered with valuable animals are the dwarf varieties of nasturtium.

S. S. Chrissy, secretary of the Chattanooga County (N. Y.) Horticultural society, says: "I think Catawba the best grape for winter keeping. Probably Diana comes next."

In the Vegetable Garden.

A farmer tells in the Philadelphia Farm Journal that a heavy dressing of fertilizer last season on his asparagus bed just after he had ceased cutting worked wonders for the crop this spring. Big, fat, strong roots resulted from a big summer growth of tops.

Pumpkins are heavy feeders and need a deep soil well manured for best results.

A white pine cucumber is preferred by many for pickles.

Professor Maynard advises for the potato beetle spraying with the Bordeaux mixture, one-half strength, and paris green, one pound to 100 gallons. Use the same mixture as often as they appear in sufficient numbers to be injurious.

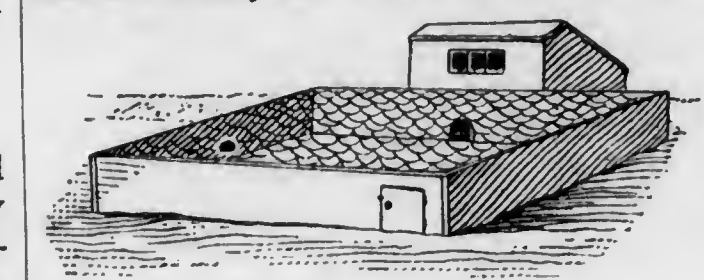
The usual remedy for potato beetles is paris green, applied in either dry or liquid form. When applied dry it is mixed with about 100 times its weight of plaster or air slacked lime. In liquid form, one pound of paris green is stirred into 150 pounds of water.

A good trap, to be had at a reasonable price from any hardware dealer, is the remedy against moles.

LOSS AMONG CHICKENS.

A Covered Inclosure That Insures a Brood from Accident.

It has been usually regarded as a foolish waste of time to count the chickens before they are hatched, though with the modern methods of testing eggs during incubation such "counting" has become a practical part of successful poultry raising. But the counting of chickens after they are hatched, two or three



WHERE THE CHICKS SCRATCH IN SAFETY. times a day, to see if cats, rats or hawks have decimated the brood, and if so to what extent, is certainly very unsatisfactory work.

Chickens allowed to run about at will, even in company with a hen, are pretty sure to grow continually smaller in numbers, not only from the casualties mentioned, but from others that are continually appearing. The care that is thus made necessary is a very considerable part of that which is given to the chicks altogether, and is moreover a care that is not necessary. Good management is as profitable here as elsewhere, and one piece of such "good management" is to have such an arrangement as is shown in the accompanying illustration from Country Gentleman, where the chickens can have a chance to scratch at will in the earth, but are at all times safe from accident.

Strips of board ten or twelve feet long are joined at the corners and the top strung with wire netting. A small opening on one side connects with the coop, which should have a hinged cover. A small door in one of the side strips gives opportunity to feed and water the inmates. Such an inclosure can be moved occasionally to fresh ground, and if not overcrowded the broods can be thus kept confined until the chickens are large enough to take good care of themselves.

Turnips, Clover and Timothy.

A Michigan farmer writing to American Agriculturist says:

Having failed several times to get a good stand of grass by sowing the seed with wheat, as is usually done here, I plowed the land as soon as the wheat was off. As fast as it was plowed the land was rolled and brought into as good condition as practicable. I then mixed a pound of flat turnip seed with the clover and timothy necessary to sow an acre, and sowed the land just as I would if I had sown grass seed alone. I then rolled the seed in without harrowing, and, although the weather continued remarkably dry, the seed came up well, even on the lightest of the soil.

Just before freezing up, so large had many of these turnips grown, I could not resist the temptation to bless myself at the expense of the land, so I took off about seventy bushels of turnips to the acre and stored them away for early winter feeding. Even then the remaining turnips looked like a mass of green, and when the frosts struck the leaves they wilted down, not as a blanket, to smother out the young plants, but as an air admitting mulch protecting the young and timothy.

When the first light snows of winter struck that field the turnip tops gathered the feathery covering for additional protection, and when the sun melted the snow on other fields here it seemed loath to depart. In spring when I visited the field and saw with satisfaction that the turnips were decayed and the clover was feeding upon their remains I felt I had

made a discovery that would enable me to become master of instead of being mastered by similar conditions. I do not remember that I have ever cut a heavier growth of grass on any land than I did that year on this field. Of course I had some wheat and occasionally a stalk with turnip seed in my hay, but with the exception of tempting mice to the bay of hay this was of little detriment.

A Profitable Late Crop.

No late crop will pay better than the mangel wurtzel for stock. They can be grown with less hand labor than any other roots and succeed well when planted as late as the 15th of June. Some seasons the earlier planting may grow larger, but usually if the ground is cultivated until the middle of June, and then planted, the growth will be more rapid and the crop will suffer less from drought than on land planted too early and with little previous cultivation. What the old farmer told his boy about the corn crop is true of all crops that need cultivation—that the best time to cultivate thoroughly to insure a crop is before it is planted. After that some parts of the surface are not easily reached without danger of injury to the crop.—American Cultivator.

Corn for Ensilage.

It is plain that if one wants a high quality of fodder or grows corn for ensilage he must grow the fodder or ensilage crop by itself and keep it separate and distinct from the crop grown for grain. It is either doing this or calmly and deliberately choosing to sustain a loss of some 40 per cent. of corn by harvesting while it is still green.

The question then comes up how to plant and handle the ensilage crop in order to raise the maximum weight on a given area. In trial tests made at the Kansas station the heaviest yields were obtained on the plots having the rows 3 to 3½ feet apart. These plots produced a heavier weight of ears and leaves in proportion to the stalks than the narrow rows did. The closer together the plants stand in the row the greater the proportion of stalks to ears and leaves as a rule. This feature is really an important point, because the stalk is practically all wasted when corn fodder is fed, as every feeder knows from experience, and even in the form of ensilage the cattle pick out the bits of leaves and ears, and refuse the greater part of the stalk. It is, therefore, of importance to have the highest possible per cent. of leaves and ears in each ton and a minimum of stalks.

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A BOUQUET INCLUDING SIX VARIETIES.

Plants potted in September for either the window garden or the greenhouse will by December begin to bloom, and with care will continue to give a supply of flowers for about three months. In the illustrations here reproduced from Vick's Illustrated Monthly are presented six varieties of excellence. Fig. 1 is William F. Dreer, a carmine pink, with the petals deeply fringed. 2. American Flag has its petals regularly striped a bright scarlet and white, while its foliage has a deep blue shade. The shades of color of the foliage of an interesting feature, the tones running from light to dark green and dark blue. 3. Daybreak is a large flower, quite double, with broad petals of a pleasing deep flesh tint. 4. Creole is velvety maroon flaked with carmine. 5. Annie Wiegand is a delicate pink finely fringed. 6. Golden Gate is a very double flower of a pure yellow color.

Six Pears for Market.

In reply to the query, "Name the six most profitable pears for market, stating how they should be grown, as standard or dwarf?" Mr. Zimmerman, of Buffalo, sent this answer to the Western New York Horticultural society:

Bartlett, Howell, Beurre Bosc, B. Clairgean, Duchess d'Angoulême, Beurre d'Anjou—Bartlett and Bosc as standards, and Howell, Duchess, Clairgean and d'Anjou as dwarf. With these I have as good success as with the standards, since they have all their roots protected with a good grass sod. It is at the root where the destructive agencies of the ever changing climate play havoc with the dwarf pears. The top of the dwarf pear is as hardy as the standard, save what harm a too heavy bearing for a number of years may bring; but that can be avoided by a judicious thinning and proper cutting back of the standard branches.

A good redtop sod gives a better protection than any top dressing of manure; the sod is always on hand, whereas the manure is sometimes not applied when needed. My earliest planting of dwarfs was in 1851, and they are yet as sound and thrifty as ever, bearing from two to eight bushels each yearly; in grass for the last twenty-five years, with no outlay for labor except a yearly top dressing of manure, which can be put on at any time between November and May. The soiling of cattle can well be carried on with this course. The red-top or June grass is fit to cut at least by the first of June, and if the manure and liquid be returned the product of the trees pays better than cultivation.

Cultivating Orchards.

At a meeting of the Ontario Fruit Growers' association these remarks were made: It is by no means necessary that one should lose the use of the soil altogether, as we can raise roots, corn, peas, buckwheat, hay, pasture and even an occasional crop of barley, not only without hurting the young orchard, but actually to its benefit, if accompanied by a judicious use of manure. As potash is the main element withdrawn from the soil by a crop of apples, in the application of manure we should govern ourselves accordingly. Three crops of rye will ruin an orchard. From the time of the planting till the death of the tree not a single crop of either rye, wheat or oats should be taken from the land. The orchard will not stand these crops and at the same time produce apples.

Things That Are Told.

As good authority as Professor Bailey says that propagating by cutting is not a deteriorating or devitalizing process.

A writer in Orchard and Garden affirms that "the apples from the Blue Ridge region from Virginia to Georgia will lead the whole United States in respect to fine quality."

Florists are generally agreed that the list of hardy roses may be profitably extended by additions from the Rosa rugosa. The new hybrid, Mme. G. Brant, possesses rugosa blood.

Lovett says of the Yale strawberry: "It is a fine, handsome berry, but the plant is so susceptible to rust that it will succeed only in cool soils and locations."

J. H. Hale, whose success in fruit culture is well known, recommends check row culture for strawberries and raspberries to all who have the land.

Desirable Currants.

The Cherry currant is credited with being the largest of all the red currants; the bunches are short and the plant vigorous and productive. Fay's Prolific, a new variety, is more prolific than the Cherry and with larger clusters. Black Champion, an English variety, is considered one of the finest of black currants. The White Dutch is a well known currant of medium size and good quality. The White Grape currant is a fine table variety on account of the large size and excellent quality of its fruit. Red Dutch is an old variety of medium size and quality. Versailles is a French sort resembling the Cherry; it is productive. Prince Albert and Victoria are both valuable on account of their ripening late and thus extending the season.

An Ohio fruit grower finds that the Jessie strawberry thrives best on clay loam.

Select hardy varieties of raspberries, and be sure to get the rows far enough apart.

The wild goose plum is not always productive unless planted next to other varieties.



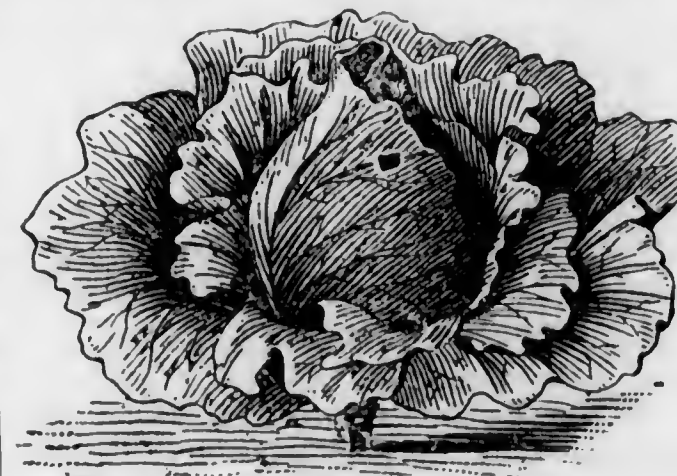
CABBAGES AS A FARM CROP.

The Cultivation of Intermediate and Late Varieties for Use in Winter.

Late cabbages are much more a farm than a market garden crop, and as a farm crop are often quite profitable. A possible surplus as well as the waste and all the unmarketable part of the crop can generally be put to good use in the cattle yard. The plants from seed sown during the early season in a seed bed are transplanted in June and July.

Greiner, in his book "How to Make the Garden Pay," advises transplanting in well prepared and liberally manured soil during June, making rows three feet apart and plants from 1½ to 3 feet apart in the row, according to the vigor of the variety and strength of the ground. Or, sow thinly during June in drills three feet apart and afterwards thin to the proper distance. In either case thorough cultivation and frequent hoeing are conditions of best success. The authority quoted says:

The intermediate varieties, such as Winningstadt, Fottlers, etc., will often give good heads in winter, at least in a moist season, even if sown as late as



THE WINNINGSTADT CABBAGE.

July. A handful of good fertilizer, bone dust, potash, etc., according to the needs of the soil, or a somewhat larger quantity of wood ashes or composted hen manure scattered around the plant after it has become well established after transplanting, as also a slight dressing of nitrate of soda, is always a great help.

All of our hard heading cabbages, when they are approaching maturity and are not soon gathered, are liable to burst open or crack. Heads showing this disposition may be pushed or pulled over to one side. This loosens part of their roots and appears to counteract the tendency. Cabbages should not follow cabbages on the same land, or club root will be liable to develop.

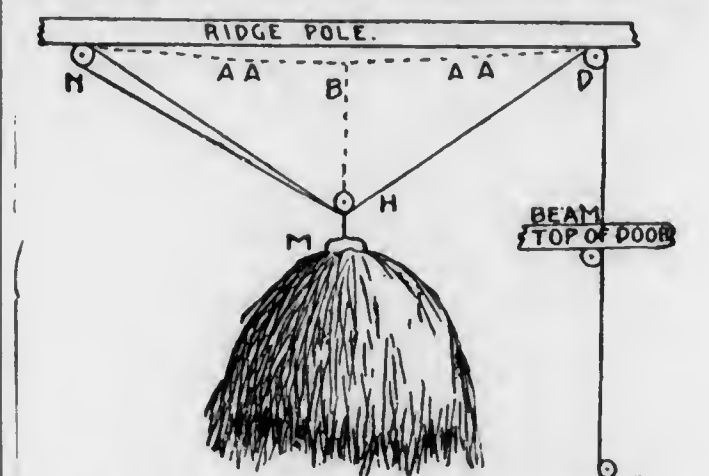
As to varieties, the Winningstadt, an intermediate kind and here depicted, is one of the best in cultivation for general use. Greiner says as a sure header early Winningstadt has no peer, and in spite of its earliness it forms large cone shaped heads, which are of good quality. It is the homegrower and novice's sort, and can be planted for early, intermediate and late by planting at different times, sometimes as late as July, even at the north. Among late varieties are the Flat Dutch, Surehead, Mammoth Red Rock, Stone Mason, Drumhead, Savoy and Marblehead Mammoth. The last named makes very large heads and is especially recommended for warmer latitudes. Red Dutch is one of the best late pickling cabbages and Felder Kraut is a German variety desirable for making kraut.

The Elberta, according to some authorities, is one of the hardest of peaches. It is excellent in quality and the tree is productive.

Rigging a Hayfork.

With other simple methods of rigging a hayfork is the one illustrated in the cut here reproduced from the New England Homestead.

N and D represent fixed pulleys fastened to the ridgepole. Another is placed near the floor to allow the rope to go out of doors. The rope is rigged by tying one end to a ring on the move-



CARRYING HAY BY MEANS OF PULLEYS.

ble pulley, H. It is then run through the fixed pulley, N, back through H and up over the other pulley and down out of the door. Then, when the hayfork, M, is put in the lead and started up, the rope follows the dotted lines B and A A. As soon as it reaches the ridgepole the hay is carried directly over to N. If filling the south mow the contrivance will have to be placed vice versa.

Lawn Mowing.

Lawn mowing with the hand machine, whenever practicable, should be done soon after the grass has been well washed by a rain, and the grit and dust removed which so often dulls the cutting blades. For the same reason set the knives so as to cut rather high, avoiding the sand near the ground, allowing the grass stronger roots and better growth than by close cutting. This advice is given by Country Gentleman.

At the Indiana experiment station Cuthbert and the old Brandywine head the list of red raspberries. Of blackcaps Hilborn is the best of its season.

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NEW FASHIONED CORNCRIB.

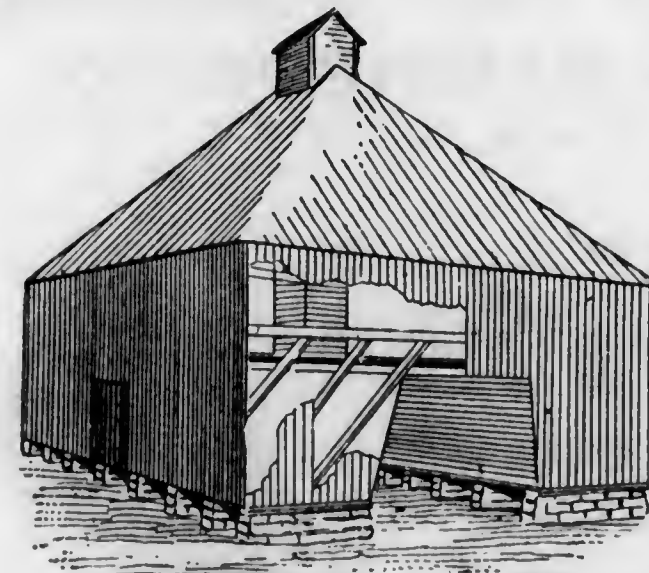
An Illinois Crib and the Device for Storing Corn Therein Described.

One of Illinois' progressive farmers, Mr. G. M. Rice, describes in The Prairie Farmer the cornerib and elevator represented in the accompanying cuts:

I wanted to put my corn where the rats could not get at it. I also wanted more room without buying more lumber. The result is so satisfactory that I will give others a chance to try the same thing.

The old crib was 36 feet long, 23 feet wide and 8 feet high, with driveway 8 feet wide the whole length, and held 1,600 bushels. The new crib (Fig. 1), built of the same lumber, is 24 feet long, 21 feet wide and 12 feet high, with driveway 8 feet wide at bottom and 6 feet wide on top, holding 2,500 bushels.

The shorter length is made up by the greater height. The gain in room is by filling the space above driveway. But the greatest economy in lumber is brought about by having clear corn-room 21 feet wide above driveway. As ordinarily built this room would make three cribs, each 7 feet wide. Six sides would then be necessary to hold the corn in, but now only two are used. And still more, the wide roof rises so high in the middle that the cornroom is high, yet the sides are low.



CORNCRIB.

The driveway and cupola form good ventilation, and when corn is green a furnace placed in the driveway could be made to send hot air up through it. Our cornerib is then a dryhouse, and our corn can be picked.

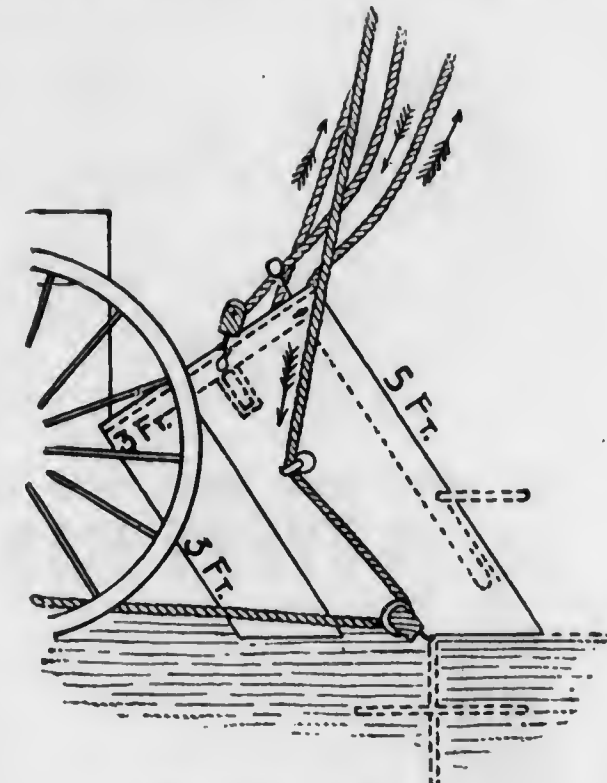
It will be difficult for some to get the corn up so high. Several elevators or carriers would be suitable for the purpose, but I use a box holding thirteen bushels and raise it as we do a horse fork. Fig. 2 shows its form and position at the end of the wagon box, also the arrangement of the ropes.

By unhitching the team from the wagon tongue and hitching to the rope the corn is raised easier and quicker than it could be shoveled 8 feet high. The box is emptied by a rod which sticks up above the top of the box. When the box reaches top of elevator shaft this rod is pushed down, the doors are unhooked and fall into the position shown by the dotted lines, the corn then slides out and the box is ready to come down.

When the box is down the lower door is put into position and hooked by shoving the rod up to its place. The upper door is held by the lower door.

This crib is set on stone piers 3 feet 8 inches apart, 18 inches high, 16 inches wide at bottom and 6 inches on top. The floors are double boards 6 feet 3 inches wide and 24 feet long, nailed to 6 by 6 sills, 5 feet 7 inches long, laid on top of

the piers. These sills have tin strips nailed to the top edge and extending 4 inches out all around, making it impossible for rats to get up to the floor. The position of other timbers and elevator shaft are shown in the drawing.



THE CORN ELEVATOR.

The studding (2 by 8) is nailed to the floor and the floor to the sills, a substantial arrangement, although the floor extends 3 inches over the ends of the sills. The studding is also set bracing so that no nail girts are needed and the crib cannot sag or lean. The form of the roof holds the upper part of the crib together. The tie girts (2 by 8) extend entirely across the building (21 feet) just above the driveway, 4 feet apart. Other timbers (4 by 6) are placed between these over the driveway, and the floor is nailed to the under side.

Successful Strawberry Culture.

Mr. William Saunders, superintendent of the gardens and grounds of the agricultural department at Washington, submitted, with some other papers on horticultural subjects, the following to the secretary of agriculture:

The principal points involved in the successful culture of the strawberry are:

1. Prepare the ground by deep plowing and subsoiling; apply a dressing of rotted manure, equal to twenty cords per acre; spread it over the surface, and mix it with the soil by repeated disintegration with a harrow. The best crops are produced on strong, loamy soils. If somewhat clayey it will be all the better, provided it is drained.
2. Allow the plants plenty of space, the rows thirty inches apart and the plants about half that distance between each other in the rows.
3. Remove all runners as they appear, and keep the surface pulverized and clean. If young plants are wanted, keep a portion of the plantation for that purpose.
4. Cover the plants in winter in all localities where the thermometer may run down to 10 degs. Fahrenheit; this to be done after the first frost, using straw, leaves or other similar materials as a partial protection.
5. Do not disturb the roots by any process of cultivation from the month of September until after the crop has been gathered the following summer.
6. Destroy the plantation after it has produced its second crop, new ones being planted to succeed those that are abandoned.

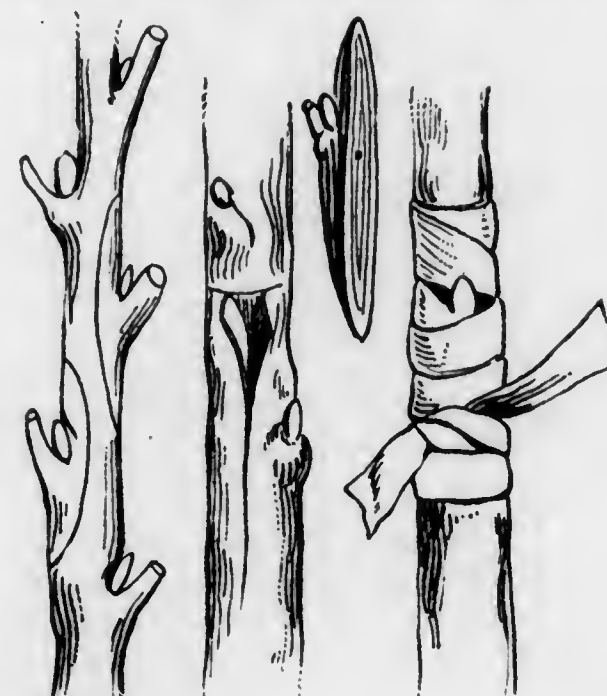
Fill a barrel one-third full of bran and water, mixed stiff enough to hold a rat on it; let them feed a couple of nights, then make them another mess in the same barrel of nearly all water. When one goes in down goes Mr. Rat, and the next, not knowing his brother's bad luck, follows suit. In the morning the barrel will be full if the rat supply holds out.



BUDDING.

The Process Plainly Described with the Assistance of Appropriate Illustrations.

The conditions of success are: 1. Healthy stock and scion free from insects, and growing so that the bark will peel easily. 2. The buds well matured. 3. The knife sharp. 4. The work done rapidly. 5. The buds firmly and evenly bound into place. No wax is needed. Prepare a lot of bud sticks as shown at



PROCESS OF BUDDING ILLUSTRATED.

Fig. 1, by cutting off all but one-half inch of the leaf stock. They should be shoots of the season's growth that are not too succulent. The buds about midway the length of a shoot are generally the best. Carry to the field wrapped in moist cloth or oiled paper.

To insert the bud select a smooth place (on the small stocks about two inches from the ground) on the north side. Make a cross cut at this point, and from it a longitudinal cut about 1½ inches long; at the same time the bark should be raised, as shown in Fig. 2. A bud stick is then taken, and with the sharp knife a cut is made just through the bark about one-half inch above the bud, taking out a thin piece of wood with the bark and bud, as shown in Fig. 4. For peaches, the whole bud need not exceed one-half inch, while for apples, etc., the bud should be at least one inch long.

After the bud is cut off the lower point is inserted under the bark at the cross cut and gently pushed down by the leaf stock.

After the bud is in place it should be wrapped firmly and evenly into place. One end of the tying material is held below the bud with the left hand, and the long end is wrapped, first upward and then downward, over the bud, as shown in Fig. 3, drawing it into place; the ends are then tied together below the bud. The hands should be watched, and when they draw too tight loosened. When the bud is united the hands should be removed altogether. The buds should remain dormant until the following spring, when the part of the stock above the bud should be cut off and the bud thus forced into growth.

Nothing is gained by budding plants in June, for a plant budded in August will have made as large, if not larger, growth in one year than a June budded plant of the same season, and it will make a straighter tree, says Samuel B. Green in The Farm and Fireside, from which the foregoing print and description are reproduced.

Polyantha roses bloom profusely and continuously, embrace a variety of color and are more or less fragrant.

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ROSES FOR PLEASURE.

A List of Hybrid Perpetuals That Will Repay Amateurs.

The amateur is often handicapped as to a knowledge of varieties, and a little judicious advice from Orchard and Garden is therefore given in the matter of roses. The inexperienced, for instance, are frequently led astray in regard to Hybrid Remontants, or Hybrid Perpetuals.



THE DINSMORE.

als, as they are more commonly called. Most of this class of roses may be said to be hardy except at the extreme north, where they will need some protection; but they do not bloom all the time by any means. As a rule, nearly all of them bloom abundantly in the spring or early summer, and many of them (not all) again in the autumn with more or less profusion, often less. Hybrid Remontants is a much better designation for this class than Hybrid Perpetual. The real perpetual bloomers are to be found chiefly among the tea roses. The different classes of roses, however, are being so mixed up by crossing that it is becoming difficult to classify the results.

Following is a list of a dozen Hybrid Remontants, which combine to a good degree vigorous growth, abundant early bloom, handsome flowers, fragrance and quite a generous bloom in autumn: Baronne Prevost, bright rose color, very large and full, but somewhat flat in form; Rev. J. B. McCann, carmine rose, medium size and globular form; Anne de Diesbach, dark rose, very large and full; Dinsmore, scarlet crimson, large and full, very free; Mrs. John Laing, pale pink, large, fine form, free and constant; Alfred Colomb, bright carmine crimson, very large, full globular form; Marie Bauman, bright carmine crimson, large, full, fine form; Pierre Notting, dark maroon tinged with bright crimson, large, globular form, pointed buds; Annie Wood, bright vermillion, large, fine form; Francois Michelin, dark carmine rose, very large, full globular form; Abel Grand, silvery pink, large, full, fine form; Marshall P. Wilder, cherry carmine, large, full semiglobular form. All these roses are fragrant, many of them deliciously so. The preceding twelve Hybrid Remontants may be increased to a "baker's dozen" by adding that excellent all around hybrid China rose, Magna Charta, carmine pink, full, globular and fragrant.

White Grapes.

The Niagara, all things considered, is perhaps the most valuable white grape in cultivation. Vine vigorous, healthy and productive, of medium sized bunches of fruit. The berries are large, pulpy

and sweet. Moore's Diamond is a pure native. Vine vigorous and productive. Berry about the size of Concord and greenish white in color. Martha is of medium quality as regards fruit; the vine is hardy and vigorous. Pocklington is a large showy grape. Lady Washington requires a long season. Rebecca is a delicious grape; vine a moderate grower. Empire State ripens with Concord; vine vigorous, fruit tender, juicy and of good quality. Duchess ripens before Concord; medium sized berry and of excellent quality. Winchell, a new grape of promise, seems destined to become valuable on account of earliness, fine quality, productiveness and vigor of the vine.

Blackberries.

The Lucretia dewberry and Early Harvest blackberry are ripe first, nearly together. The latter is rather small but hardy and productive and valuable for market because of its earliness. Agawam, Wallace, Knox and Erie are large and productive and hardy enough for the lake shore region. Minnewaski promises to be the same, but is not well tried yet. Wilson and Wilson, Jr., are nearly identical and profitable for market if covered in winter.—Michigan Station.

Things That Are Told.

New varieties of narcissus are grown from seeds, which give flowering bulbs in three or four years. Ordinarily the narcissus is from bulbs, which flower the second year.

Professor Fernow, in a recent address before the Kansas state board of agriculture, laid great emphasis on the value of shading the ground for forest trees. It is as much, it would appear, an element in good forestry to have shaded ground as in fruit culture.

The oriental spruce, says Rural New Yorker, is a shapely little beauty, and one of the most desirable of all evergreen trees, particularly for small gardens. One of its best points is its habit of keeping its branches right to the ground, even in large specimens; and one of its worst points is that it is one of the most difficult of spruces to transplant successfully.

S. Miller, a progressive Missourian, says: "As to peaches budded on plums, I have yet to make the first success in that line. In the first place it is difficult to get them to take, and next no plum stock I have grows strong enough to support the peach, though the Maritima may do so; but I have not yet tried it."

Bee Notes.

E. R. Root tells in Bee Gleanings that pure lead, zinc and French ochre, in equal parts, mixed with raw linseed oil, make the ideal paint. All these substances combine perfectly and form a smooth, hard, durable surface of light straw color that will neither peel, crack nor rub off. It is so nearly white that it is not an objectionable color for beehives.

The idea is now advanced that there is a connection between hard winters and good honey seasons.

A beekeeper recommends candy pails as the best and cheapest thing for extracting honey. When the honey granulates they can be shipped anywhere.

A Canadian apiarist is of opinion that bees wear out and die more quickly in windy weather or in windy localities than where the air is still. Hence the importance of selecting a sheltered locality.

Italian bees are said to be more energetic in resisting the attacks of the bee moth than are the common black bees. As a rule, moth invasion means a weak, queenless colony and neglect.

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INSECTICIDES, FUNGICIDES, ETC.

The Prevention of Insect Injuries and Fungus Diseases.

Some of the conclusions reached at the Hatch (Mass.) experiment station, as the results of the work of the past season in regard to the prevention of insect injuries and fungus diseases, are: That the apple scab, pear leaf blight and cracking of the fruit, the peach and plum fruit rot, the plum leaf blight and plum black wart, the grape powdery mildew and black rot, the raspberry anthracnose and the potato leaf blight and rot may be wholly or largely prevented when the solutions of copper are properly applied.

That by the combined use of the bordeaux mixture and paris green fungi are prevented, tent caterpillars and canker worms are killed and the injury to the apple and pear from the codling moth and to the plum and peach from the plum curculio may also be largely prevented.

That the peach foliage is very susceptible to injury from copper solutions, and that these must be applied at from one-third to one-fourth the strength used upon the apple and the pear.

That the amount of copper adhering to apples and grapes that have been properly sprayed with copper solution is so small that no injury can possibly occur from their free consumption.

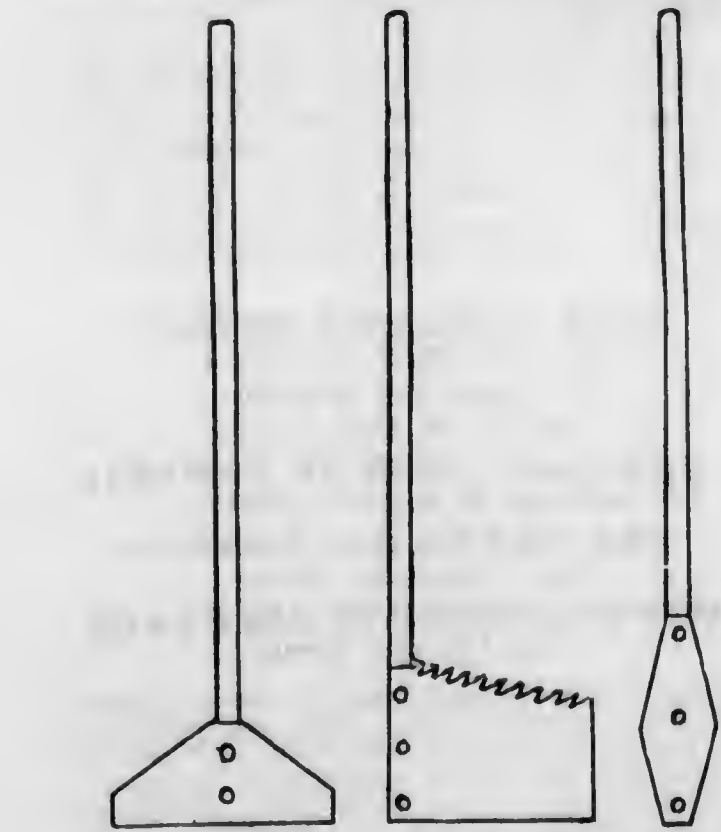
That girdling the grapevine, as demonstrated in a vineyard during the season of 1890, resulted in a weakened growth and in a diminished crop in 1891.

That young trees may be protected from injury by mice by painting with Portland cement and paris green.

What Was Done with an Old Hand Saw.

A correspondent writing in American Gardening says:

I took the handle off and presented it to a carpenter. I then had the blacksmith cut the blade crosswise into three parts. Of the first and widest piece, 7 1/2 inches long, I made a sod ax, as seen in the central figure. Of the second or middle



PATH CUTTER. SOD AX. PRUNER.

piece, 10 1/2 inches long, I made a strawberry path cutter, shown at the left; and the remaining piece, 7 1/2 inches long, was transformed into a strawberry pruner, as seen at the right of illustration. The last named is used for cutting off runners in the early part of the season. It saves stooping and backache, and is useful also for cutting off the roots of large weeds sometimes found in strawberry beds. These implements were all made sharp on the grindstone.

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FRUITS FOR EXHIBITION.

Professor Hilgard's Directions for Preparing the Fruit.

In a circular issued by Professor Hilgard, of the California State university, on preparing fruit for exhibition at the World's fair, these directions occur: Pick the fruit as unripe as is consistent with a proper exhibition of the size, surface, texture and color. Handle it as little as possible and without touching it with the hand, except as the latter holds a piece of fruit wrapping paper. Cut off with shears and receive the fruit with the hand thus protected, without jar or pressure. Just before placing in the preservative fluid rinse fruit with a jet of clear water, removing dust and fungus.

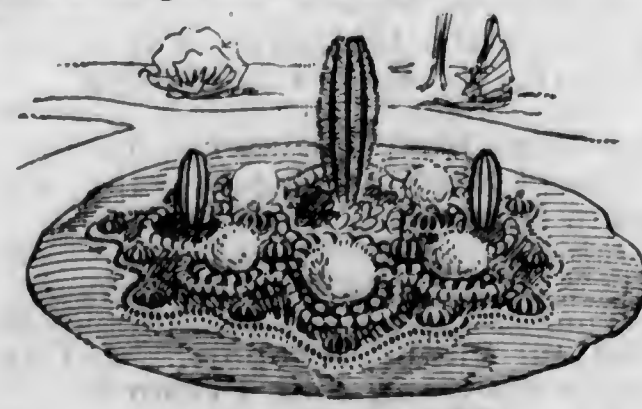
The preservative fluid must have the same density as the juice of the fruit, which is 6 degs. of the must spindle (an instrument obtainable of winemakers). Salicylic acid is a very energetic preservative, even at the moderate rate of one-fifth of an ounce to the gallon of water; the dissolution of the acid is best effected in boiling water. But for the purpose of long conservation it is best to increase its solubility by using 1½ ounces to every five gallons, dissolving the extra half ounce by the cautious addition to the (boiling) water of enough sal soda to make it clear and to make it remain so after cooling. It is of the greatest importance that not a particle more sal soda be used than is just sufficient to dissolve the last flake of the acid. The least excess of soda will tend to soften the fruit and spoil its color.

Glycerin or pure white sugar made into a sirup is added to this solution to increase its density to that of the fruit juice. If the spindle in the fruit juice shows 4 degs. six ounces of white sugar or good commercial glycerin must be added for each gallon of the preservative fluid wanted, the rule being to add 1½ ounces of sugar or glycerin to the preservative fluid for each degree shown by the spindle in the fruit juice (to be extracted from other samples by pressure or stewing as for jelly making).

The Cactus in Artificial Gardening.

True taste in gardening requires certain harmony in parts before the effect of the whole can be considered beautiful. For instance, statuary and rock work, so charming in connection with artificial gardening, have a depressing effect as often placed. In artificial gardening plants with a formal, artificial appearance are particularly delightful, and these are peculiarly appropriate in city gardens.

Mr. Blanc, who has done so much to encourage an increased use of cactuses and allied plants, arranged a bed of them



A CACTUS GARDEN.

which was a masterpiece of beauty as then located, and of which we append an illustration as it appeared in a recent issue of Meehan's Monthly.

In the same issue occurs a notice of the Sago palm, which as an ornament

for the front doors of houses with pretensions of taste Meehan thinks cannot be surpassed. These are not common, because it is only now and then that they throw out offsets, by which they can be increased. They grow with extreme slowness, and yet are long lived. There are specimens about our older cities that are over a hundred years, and are not more than from six to eight feet high. They are interesting botanically, through being the link between ferns and palms, and are appropriately called to notice in connection with artificial gardening.

THE BURDOCK.

How This Troublesome Weed Is Propagated and How It May Be Eradicated.

The burdock is a biennial. It has a strong tap root which goes down to a great depth in the soil. The root as shown in the sketch is broken off. The seed is borne on a branched stem which pushes up from the center of the plant. The seeds are matured in inclosures at the outer end of the branches. These seed sacs are somewhat circular in shape and they are so armed that they have the power to adhere to almost everything that may come in contact with them. Hence we find them clinging to the hair of horses and cattle that may pasture where they grow.



THAT BIENNIAL WEED, THE BURDOCK.

Where burdocks are allowed to grow freely the wool of sheep coming in contact with them soon becomes of but little value. The number of seeds produced by a single plant is very great. When the burdock is cut off above the surface of the ground it will at once grow up again. The effort to produce seed during the second year of the growth of the plant is most persistent. It will ripen seeds until frost.

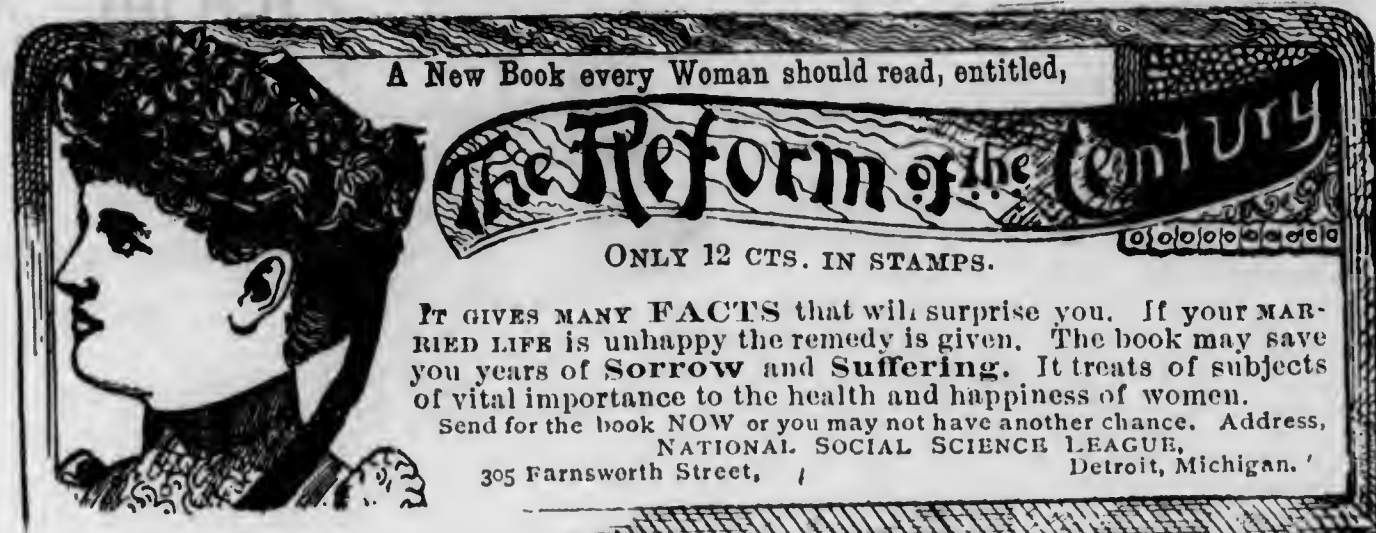
The man who mows his meadow down, too readily concludes that his whole duty has been discharged to the burdocks growing in it, when it has only been half discharged. Though he should fail to find the young burrs that soon grow up around the parent stem, his sheep will not fail to do this when they come to feed upon the aftermath. This weed is propagated by means of seed and chiefly through the medium of animals to which the burrs may cling. The seed has the power of retaining vitality for a long time. Because of this it may require several years to completely rid a place of burdocks.

Like all biennials, the burdock is easily destroyed in cultivated fields. It is in byplaces, as fence sides, lanes, corners around the buildings, pastures and the borders of woodlands, that burdocks give trouble. But even in these they are not difficult to destroy. Farmers who go over their fields twice a year with the spud will soon have no burdocks! In cutting them care should be taken to strike below the crown. Every plant cut in this way must die, says an Ohio Farmer correspondent, authority for the foregoing. The cutting may be done at any time of the year when the ground is not frozen, and it is of course much more easily done when the plants are young.

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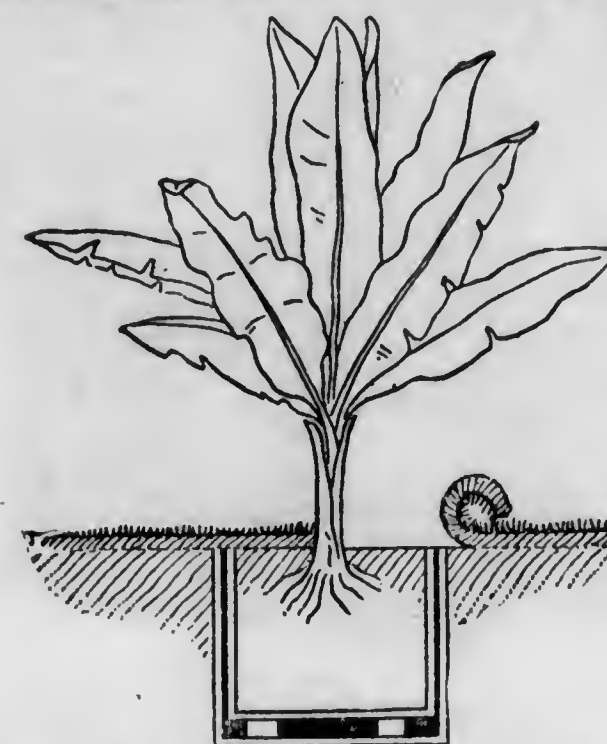
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Setting Out Large Plants.

A very usual custom when putting out the palms, oleanders and other tender plants for the summer is to set them about with the boxes or tubs in sight. A more effective way of using many kinds is to sink out of sight the tubs in which they grow, giving the appearance that the plant is growing naturally in the new place. The engraving, from American Gardening, shows how a box may be lowered into the lawn and entirely hid.



PLANT IN TUB LOWERED INTO THE LAWN, den, conveying the idea that the plant grows out of the grass. First the sod is rolled back; then an excavation some inches larger than the tub is carefully made and lined with rough lumber, into which the box is lowered, as shown in the cut.

There should be at least an inch space around the box after it is lowered into place. The sod is then straightened into place and there is every appearance that the plant grew where it stands.

STREET TREES.

The Cause of Their Frequent Deterioration—Kinds That Thrive Best.

Trees in cities and towns do not always thrive, nor does this lack of thrift always proceed from the roots. Professor Arthur, of Indiana, reports to the department at Washington that the cause of deterioration is often to be found in the smoke from large manufacturing establishments and especially from our refineries. The action of the smoke is twofold—mechanical and chemical. No practical method of preventing the effects can be suggested so long as the smoke nuisance continues. Remedial action therefore lies in two directions—preventing the escape of the noxious gases or planting such trees as are exempt from ill effects of the gases. The first is a matter for the city authorities, hence the latter only will be here considered.

As regards the choice of trees Professor Arthur reported: "When the smoke nuisance is excessive none will survive. The confifers suffer most. Of deciduous trees the alder, which can hardly be considered a desirable street tree, and the sycamore seem hardiest; next come the poplars, the ash and the linden and the very ornamental mountain ash, which deserves more attention than it has yet received. As to the elm, experiences seem to differ; probably otherwise very favorable conditions of growth, which, however, are rarely found in cities, may enable it to resist the effects of the smoke. The Norway maple seems to excel our American kinds in smoke resisting quality. Ailanthus, horse chestnut and black locust are also mentioned as available." The

professor inclines to add to the list of trees capable of resisting the action of smoke the sweet gum or liquid amber, which, in every respect, is one of the most commendable street trees, and also the tulip poplar.

Small Flocks of Fowls.

In the summer season the hens on the range secure a large share of food that cannot be utilized in any other manner, and where a small flock is kept and confined in a yard in some suburban location they can be kept on the waste of the family. The hen will subsist on all kinds of food—meat, seeds, fruits and vegetables—which gives her a wide range. It will pay to keep a few hens to consume the waste of a family, as the hens return their product to their owner in a short time.

To attempt to feed a pig on waste food compels the owner to wait until the pig matures, but the hen will begin laying and continue throughout the season, thus paying cash in eggs for all she receives, and she will accept anything that is edible. A small flock pays better than a large one, proportionately, because of the utilization of the refuse, and because but little or no labor is required for them compared with a large number. All who have waste and refuse should provide a place for hens and thus convert the waste into eggs, according to The Breeders' Guide.

Insecticides Recommended.

Professor Smith, of the New Jersey agricultural station, attests the value of potash salts for insecticidal purposes. Kainit was found to be more effective than the muriate of potash. Used of a strength of half a pound to a gallon of water, it was effective against cabbage maggots, plant lice, infesting rosebushes and other species. Muriate of potash of the same strength quickly killed the mealybugs on greenhouse camellias when sprayed upon them without injury to the plants. It was also promptly effective upon the roseleaf roller. It was found to injure some of the more delicate plants, and therefore needs further experiment with it.

Of the several preparations of tobacco, Professor Smith gives preference to that known as "X. O. dust," which seems to be tobacco, carbolic acid and whitening. It was more active against plant lice than even pyrethrum, and all kinds of naked larvae yielded readily. The cabbage worm was destroyed by it.

Pansies.

Great strides have been made in the improvement of pansies within the last five or six years. Probably in no part of the world has more attention been paid to the pansy than in Scotland, where societies are yet in existence for its improvement, establishing points as to the size, form and coloring of the flowers, apparently showing that their excellence has been reached there. It was left to a few French specialists, however, to enter the arena of floriculture with their magnificent productions and to eclipse all ever attempted in that line, in instance of which we have but to name Bugnot, Cassier, Falaize and Trimardeau.

Bonemeal.

Steamed bone differs from raw bone only in that the former is much less tough, so that it can be ground to a finer meal with the same expenditure of power, also some of the fat of the bone has been removed, and what is left is in a better condition for plant food; the fatty matter tends to retard the decay of the bone. Sometimes the steaming may be carried so far as to remove some of the gelatine of the bone, in which case the bonemeal would be less valuable than the raw, because poorer in nitrogen.

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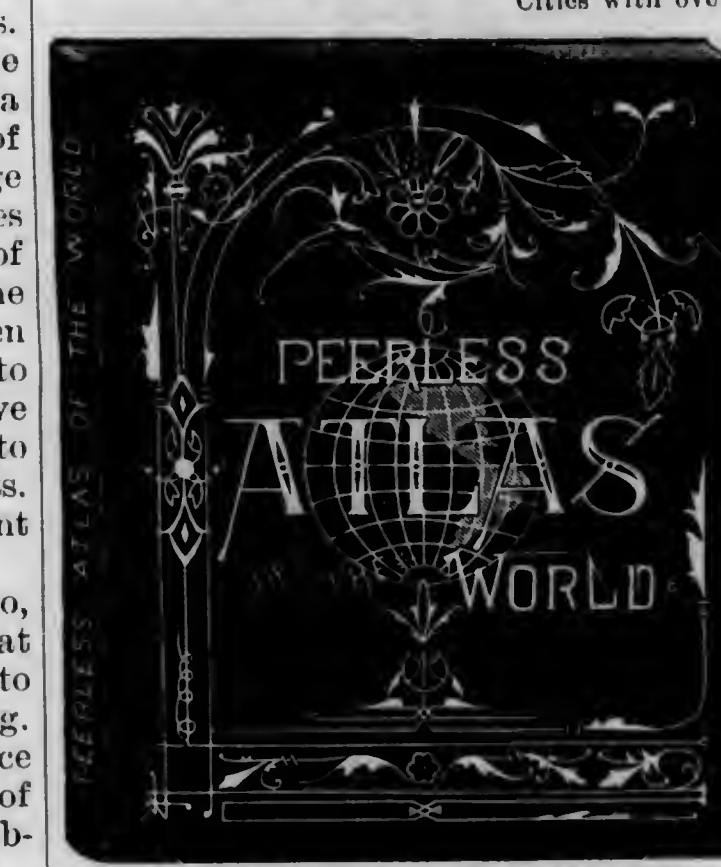
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